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CHAMPION LARNED'S FOREHAND STROKE.

HOW TO PLAY LAWN TENNIS

Containing Practical Instruction from an
Expert on Making Lawn Tennis
Strokes. Brief Description
and History of the
Game

and other useful information



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General Description of Lawn Tennis.

Lawn tennis is played by two, three or four people (though very seldom by three) on a smooth stretch of ground called a court. The playing surface of this court is 27 feet (for singles), or 36 feet (for doubles) in width and 78 feet in length, and it is laid out on a level surface of grass or turf, or occasionally on a board floor under a covered roof in winter. The court is marked out with white lines on the ground indicating the boundaries, and the space is divided in two by a net three feet in height stretched across the centre from side to side.

Each player is armed with a racket, which is a wooden frame about a foot long and eight inches wide, the oval open space being covered with a fine network of catgut strings, and the frame supplied with a handle about 15 inches long. With this racket the players strike a ball $2\frac{1}{2}$ inches in diameter, of rubber filled with compressed air and covered with felt.

This ball is knocked from one side of the net to the other back and forth until one side misses it—that is, fails to hit it at all, or knocks it into the net, or out of the court. Either side scores a point when the opponent fails to return the ball into his court. The object of the game, therefore, is to knock the ball into the opponent's court so that he cannot return it.

The first player to hit the ball is called the server (he is chosen by lot) and he throws the ball up into the air and knocks it over the net and into the court on the opposite side. After this service is delivered, each side must strike the ball in turn, hitting it either before it touches the ground (a volley) or after it has bounded only once. It is against the rule to

volley in returning the service, but after this second stroke of each point, it is optional with the players whether they volley or return the ball on the first bounce.

The method of scoring is simple. The first point won for either side counts 15, and if each side should win one of the two first points, the score becomes 15—all, "all" meaning "even" in every case. The server's score is always called first and the first point therefore makes the score 15—love, or love—15 (according to whether the server or his opponent wins the first point). "Love" means nothing in tennis scoring. The second point for either side is 30 and the third 40. If the server wins the first two strokes, the score is 30—love; if won by the opponent, it is love—30; if each has won a point, the third count then makes the score 30—15, or 15—30, according to whether the server or his opponent is ahead. Thirty-all follows when each side has won two points; 40—30 or 30—40 when one side has two and the other side three.

Either side wins a game when it has scored four points, unless each side wins three points, which would make the score 40—all, but which is called "deuce" instead. Here lies the only intricacy in the method of scoring. When both sides are tied at 40, or three points each, the score is deuce, and one side must win two more strokes than the other from this point in order to win the game—in other words, if the score once gets even at 40, neither side can win by a single point. From deuce, the score becomes "vantage-in" or "vantage-out," according to whether the server or his opponent is ahead (the server is always "in" and the opponent "out"). With vantage in his favor, either side can win the game by capturing the next point, but if it goes to the other side, the score returns to deuce again, and so on indefinitely until one side or the other has won two points in succession from deuce.

When a game has been won, the other side becomes the server, the service alternating with the games. The score by games is called with the server's score first, or sometimes in matches with the side that is ahead first. When the games are even, the score is called at 1—all, 2—all, 3—all or 4—all as the case may

be, but if it is even at 5—all, then deuce and vantage games are played just as in points during the games. Five—all is deuce and from this point it is necessary for one side or the other to win two games in succession to take the set, that is, as in the games, the set cannot be won by a majority of one, the winner must score at least two or more games than the loser. Most matches are the best two in three sets, although some championship matches are the best three in five sets.

The server must always strike the ball in the air before it touches the ground, but the opponent, who is known technically as the striker-out, is not allowed to strike the ball when first served until after it has bounded once. After these first two strokes, one from either side, the ball is always in play until one side or the other fails to return the ball properly and the opponent then scores a point. Either player, after the first stroke from either side, may play the ball before it has touched the ground, which is called a volley, or after it has struck and bounded once. If it is allowed to touch the ground a second time, the point is lost.

A drive is a fast hard stroke played underhand from the back of the court, and a smash is an overhand volley played very hard and fast to "kill" the ball by the speed of the stroke. A lob is a ball knocked up into the air to pass over an opponent's head, when he is at the net, or to gain time. To cut the ball is to strike it sideways, so that it twists rapidly on its own axis, like a billiard ball with "English," which makes it bound crooked.

A Brief History of the Game.

Lawn tennis is essentially a modern game, for its origin dates back less than thirty years. Its geneology is rather obscure, and the best authorities disagree as to its direct parentage. The first record of any such game in Europe, however, occurs in the Middle ages, when a crude form of tennis was the favorite sport of the Italian and French feudal kings and nobles. The French seem to have borrowed the game from the Italians, and they called it *la longue paume*; in Italy it was known under the name of *pallone*.

This French game was played with a cork ball, which was originally struck with the hand over a bank of earth, which served the same purpose as our modern net. Soon a crude racket with wooden frame and handle and gut strings was substituted, and in this form the game was introduced into England and flourished there for many years.

Major Walter C. Wingfield, of the British army, is popularly credited with the invention of lawn tennis, as we know it, for he patented the game in 1874. His original game was played on a court shaped like an hour-glass, 60 feet in length and 30 feet in width at the base-lines. In the center was stretched a net 21 feet wide and 7 feet high at its sides, which sagged to 4 feet 8 inches in the centre. The old method of racquet scoring was used, and the server was required to stand within a marked space in the middle of his court.

In March, 1875, the first regular laws for the game were formulated by the Marylebone Cricket Club, of Lord's. The club's committee selected the name of lawn tennis, and promulgated a new set of rules that were accepted by Major Wingfield and a large majority of those who had taken up the new game. They set the length of the court at 78 feet, and there it has remained to this day; but they still preserved the hour-glass form, and the breadth required by their first rules was 30 feet at the base-lines

and 24 feet at the net. The net was set at 4 feet high in the centre and 5 feet at the posts, and the service-line at 26 feet from the net. The racquet system of scoring, with one or two minor alterations, was also preserved.

At the urgent suggestion of Henry Jones, who afterward became famous as the "Cavendish" of whist, the All-English Croquet Club, whose grounds at Wimbledon have since become famous the world over, opened its lawns to lawn tennis in 1875, and so popular did the game become that an All-England championship meeting—the first of the series which has represented the amateur championship of England—was held in July, 1877, the name of the club being then changed to the All-England Croquet and Lawn Tennis Club. This first tournament was eminently successful, and the All-England club assumed control of the new game. By common consent its decisions were universally respected. In 1883 an attempt was made to form a National Association, but as the All-England Club declined to enter into the project, it was a failure, and in its place an annual meeting of club secretaries was held under the auspices of the All-England Club, for the purpose of legislation, until 1888, when the present English Lawn Tennis Association was formed as a national body to govern the sport. The authority of this organization has never since been questioned, and its decisions have been accepted throughout the continent and British colonies. The only part of the world where separate laws are made is the United States, and even here the English rules and changes are carefully considered before any alteration is made.

Major Wingfield's crude lawn tennis game first made its appearance in America in 1874, the same year it came out in England. A Bostonian, who was traveling abroad, brought home a set of Wingfield's rules and implements for the game, and a court was laid out at his country home at Nahant, a seaside resort near Boston. Another court made its appearance at Newport the following spring, and the Staten Island Cricket and Base Ball Club, near New York, also took up the game in 1875. At Philadelphia, too, the game was introduced at the Young America Cricket Club's grounds, and soon grew popular.



END OF A FAST FOREHAND STROKE.
(MISS MARION JONES.)

During the first few years of its American existence lawn tennis was played under widely varying conditions, but the distance between the points of play being too great to let these differences become apparent until open tournaments were held. The nets hung at different heights, the courts varied somewhat in size, and the balls differed materially both as to size and weight. Local tournaments were held at Newport, Boston, Philadelphia and Staten Island, but it was not until 1880 when James Dwight and Richard D. Sears, of Boston, who were afterward so famous in lawn tennis, played at Staten Island and Philadelphia, that the full importance of this confusion became apparent.

The following spring in May, 1881, a meeting was held in New York, and the present United States National Lawn Tennis Association was formed. The English rules, as then in vogue, were adopted almost in their entirety and the English championship balls were also accepted as official for all American tournaments. It was decided shortly afterward to hold an annual championship tournament at the Newport Casino, and a series was started that has since been continued regularly every year, becoming second in importance only to the Wimbledon event.

Dwight and Sears were distinctly superior to all other players in America during this early period, and their only dangerous rivals for several years were the Clark brothers, of Philadelphia. But the game spread very rapidly in American soil, and new courts and new players sprang up on every hand, although Sears managed to retain his title as champion for seven successive years. During this time, the play developed rapidly and the skill of the players increased with wonderful speed, but Sears kept place with all improvements and managed to keep well ahead of all his rivals until an injury to his shoulder made it difficult for him to play, and he retired on his laurels unbeaten.

During the first seven years of American lawn tennis, R. D. Sears was invincible. The first three seasons he played through each tournament at Newport, and each season won the championship without the loss of a set. In 1884 the present system of barring the champion out of the all-comers' tournament was adopted and Sears successfully defended his title against the

challenge of H. A. Taylor, who was the first challenger for the American championship. Sears beat Taylor rather easily by three sets to one, and the following year he repeated his success over C. M. Brinley, who was the challenger for 1885.

In 1886 R. L. Beeckman won the Newport tournament and challenged in turn for the championship title. Again was Sears invincible, Beeckman meeting the same fate as both of his predecessors, although he forced the champion to the first close match he played at Newport. A year later H. W. Slocum, Jr., challenged for the title, and he was badly beaten by Sears in straight sets, although he had beaten all of the other leading players of the country in the all-comers' tournament.

Sears's reign ended in 1888, when he voluntarily relinquished his claim to the American championship. He had injured his shoulder and neck somewhat and was forced to give up severe play. Slocum won the Newport tournament again and took the championship by default in Sears's absence. This began the second era in American championship tournaments. Slocum's "tenure of office" lasted only two years. In 1889 Q. A. Shaw, Jr., won the all-comers' tournament at Newport, and was beaten three sets to one by Slocum in the challenge round, but a year later O. S. Campbell, who had been runner-up to Shaw the year before, earned the right to challenge the champion and managed to wrest the championship title from him by three sets to one.

Campbell's successful innovation of extreme net play was the first of many experimental stages American players had yet to go through. He cultivated volleying far beyond his ground-strokes, yet his methods were startlingly successful at home, and he proved invincible for three years. In 1891 Clarence Hobart challenged him for the championship, and was beaten in a five-set challenge match, and the following year F. H. Hovey, of Boston, met a similar fate, although only four sets were required this time to settle the question of supremacy.

The following summer R. D. Wrenn won the all-comers' tournament, beating Hovey unexpectedly in the finals, but before the challenge match could be played, Campbell announced his retirement, so the championship passed into Wrenn's hands by de-

fault. Wrenn was another volleyer, but with a good command also of ground-strokes, and the modern era in America then began with Wrenn's advent in 1893, but his style was not fully appreciated until the following year, when M. F. Goodbody, the visiting Irish expert, went through the Newport all-comers' tournament, beating three of the crack American players, Hovey, Hobart and Larned by superior steadiness. When Goodbody challenged Wrenn, however, it was a different story, and the persistent resourceful methods of the American champion showed his style of net play to be a distinct advance over the former American school.

Hovey had learned the lesson of steadiness better than others by the time the next tournament came around, and he won the Newport tournament with the loss of only one set, and they challenged Wrenn and beat him in straight sets for the championship.

In 1897, the season was made memorable by the visit to American courts of a team of British players composed of W. V. Eaves, H. S. Mahony and H. A. Nisbet. They were beaten in the international tournaments held at Hoboken, N. J., and Chicago, Ill., and also in an open event at Longwood, Mass., before the championship meeting at Newport. Here Eaves beat Nisbet in the finals and Mahony was retired in an earlier round by M. D. Whitman. Again was Wrenn, the champion, called on to defend the national honors against a challenging Englishman and again he succeeded in defeating the foreigner. The same aggressive net play, which had improved since he first won the title, helped Wrenn to victory and when the fifth set of that memorable struggle was reached Wrenn was much the stronger and surer, and won with a margin to spare.

A year later, the war with Spain broke out and both Wrenn and Larned were among the volunteers who went to the front in Cuba. In their absence, the younger generation of American experts had matters very much their own way, and M. D. Whitman loomed up out of the group as the steadiest and in many respects the cleverest. He won the Newport tournament after one or two close matches and so fell heir to the cham-

pionship title in the absence of Wrenn. The new champion made a wonderful record during 1898, 1899 and 1900, playing steadily through all of the most important American and Canadian tournaments during the three seasons, and losing three matches the first year, none the second and only one the third.

The season of 1899 was Whitman's most remarkable one, for he not only did not lose a single match, but was not once forced close in tournament play. With unbroken success he defended all of the many challenge cups he had won the previous year, and when he came to defend his championship title he was considered invincible. The all-comers' tournament had a rather sensational ending since first honors were won by J. P. Paret, after a number of sensational matches, in which the old lesson of steadiness was repeated once more.

The season of 1900 was made notable by the first officially recognized international matches in the sport. Through the generosity of D. F. Davis, an International Challenge Cup was offered and a challenging team was sent to America to try for the new trophy. This was composed of A. W. Gore, E. D. Black and H. R. Barrett, Black being a Scotchman and the other two English. The international matches took place at Longwood, Mass., the first week in August and the poor showing of the challengers was a surprise to all, even to the defenders themselves. The American team won the first three matches played, giving them the victory before the last two matches of the series were finished.

Two of the foreigners, Gore and Black, were also entered for the championship event at Newport, but made a poor showing there. Black was forced to the full five sets by Sumner Hardy, and by C. R. Budlong, and then succumbed easily to his fellow-visitor, Gore. The latter required the full five sets to beat Holcombe Ward, and then went down before G. L. Wrenn, Jr., who in turn was unable to get a set in the finals from Larned. The latter had an easy road to the finals, winning the all-comers' and challenging Champion Whitman. Again the champion proved invincible and although Larned's brilliancy carried off the second set in fine style, his spasmodic attack finally broke down

before Whitman's wonderful defence and the champion retained his honors without great difficulty.

This, his third successive victory, gave him possession of the fourth American championship challenge cup, its predecessors having been captured by Sears, Campbell and Wrenn.



A STRAIGHT-ARM FOREHAND DRIVE.
(M. D. WHITMAN.)

A First Lesson for Beginners.

To begin right is half the game in lawn tennis, and if one wants to learn to play the game well, it is important to begin correctly. Some of the simplest matters are the most important, and if these are mastered at the start the improvement in skill will follow quickly after, and the development be gradual but rapid. To accumulate bad habits of play when first learning the game is only to handicap a beginner indefinitely, for it is much harder to give up bad habits and alter the style in these small matters than to begin all over again and learn anew. Some of the most important of these minor details are the smallest and the most likely to be overlooked. They are not child's play, by any means, and should not be ignored because they seem simple. Even the best experts had to learn them first and must observe them as well as the beginner.

First and most important of all, the racket should be firmly gripped in making all of the strokes. A loose grasp ruins otherwise good play, and no habit interferes with progress more than that of holding the handle loosely. The slightest relaxation in the grasp will often let the racket turn in the hand while making a stroke, and it is failure in consequence. It should be held by the extreme end always, the "butt" or leather binding at the end resting against the ball of the hand.

For all forehand strokes, or those made when the ball is on the right side of the body, the hand should rest diagonally along the handle, with the first finger separated from the others and extended an inch or two further along the racket, but also wrapped around it; it should never rest its full length along the handle, as we sometimes see beginners doing. The finger nails when at rest on the handle, should face at the moment the ball is hit in the direction in which it is to fly.

For backhand strokes, those made when the ball is on the left

side and the arm and racket must be drawn across in front of the body, the fingers should be closed together and the thumb extended out straight along the handle behind the racket, in order to give more force and better direction to the ball. In backhand play, the second or middle knuckles should face when the racket meets it in the direction in which the ball is to be driven.

In changing the grip after one stroke for another on the opposite side, it is necessary to shift the grip somewhat, but this is easily accomplished as the racket is carried across in front of the body. It is the custom of almost all good players to balance the racket between strokes in front of the body, with the upper part of the handle at the "splice," as the fork where the wood of the handle spreads out into the frame is called, resting lightly in the left hand.

After every stroke it is well to return the racket to this position, and the shift in the grip between strokes will never be found difficult if this is done. In the heat of the play, the effort of shifting the hold becomes almost unconscious and does not distract attention from the strokes themselves. Nearly all experts condemn as bad form the habit of playing both forehand and backhand strokes with the same grip.

In actually making the stroke, the racket should start as far behind the point which the ball is to be hit as possible, and swing as far beyond it after the blow as the full reach will permit. In forehand strokes, the full length of the arm should be extended behind the body to start the swing with plenty of impetus and the stroke should be finished well up over the left shoulder, the racket even turning in the wrist and dropping down back of the head to stop its impetus.

The swing for backhand stroke should be almost exactly the reverse, the racket starting over the left shoulder and ending at the extreme length of the arm extend out beyond. The body, however, should be turned around in exactly the opposite direction, so as to face the ball for each stroke, and the position of the feet should be shifted so as to give the firmest balance and the freest motion of the body. The feet should be spread well apart and the body bent forward at the hips just before the ball

is struck, so that its weight is added to the impulse of the racket in making the stroke.

As in golf, the weight of the body is carried on the rear leg and foot before the stroke, and as the racket swings toward the ball, it is thrown forward, shifting to the other, so the added force of the body greatly increases the power of the stroke. A long swinging sweep of the arm and racket should be cultivated so as to meet the ball squarely and with a powerful impact as it comes toward you.

All side motion of the racket is lost power; as in golf, the head of the racket and the wrist that guides it should travel as nearly as possible in the direction the ball is to go just before the stroke, while actually hitting the ball and as long as possible after the impact. The "follow through" is nearly the same in tennis as in golf and quite as important. Greater freedom in swinging the weight of the body while making the stroke is possible in tennis, for the left arm is free to help recover the balance, while in golf both are required in holding the club. A tennis stroke is made while the body is in motion, too, instead of being still, as in golf, so the weight is carried still further forward and checked by bringing the rear foot out in front of other. In making a fast tennis stroke forehanded, the weight starts on the right foot, shifts to the left as the ball is hit, and is finally checked again on the right, which takes a step forward to recover the balance just after making the stroke.

In making lawn tennis strokes, it is vitally important to keep away from the ball. One of the most common errors among beginners—even with some experienced players—is that of getting too close to the ball while playing. The cramped elbow that results from this ruins many more strokes than ever spoiled by being too far away from the ball. A splendid maxim laid down by an expert player is that every player should *go to* the ball in making a stroke, and never let the ball *come to* him. Even when one finds himself in the right position to take the ball, it is better to step back as it approaches and then forward again to meet it, for this insures the correct position, with better speed and direction with the weight moving forward when the stroke is

made. If the flight or bound of the ball is a little further than calculated, the player will still be in the right position and not too close. In every stroke of the game, the position should be that of meeting the ball; no fast stroke can be made while moving backward or even with the weight thrown backward.

The actual position of the racket in the hand while the stroke is being made is very important. In the preliminary swing and in hitting the ball, the head of the racket should be nearly level with the wrist, and the end of the swing should finish with the racket well above the wrist. This requires an upward motion of the racket's head as well as the forearm, and it is this motion that lifts the ball over the net, while turning of the wrist to one side or the other directs it to the right or left.

As the racket meets the ball, its head should be drawn slightly upward so that the strings are dragged across the face of the ball as they hit it, and this slight side motion gives the ball a twist that keeps it from "sailing," and makes it drop soon after crossing the net. In some of the "lift" strokes or "drop" strokes played by experts, like the famous "Lawford" stroke, for instance, this drop is much exaggerated, and the ball describes a rainbow arch in its flight, dropping suddenly after crossing the net. Much power is wasted in such strokes, but a little twist is generally necessary to hit the ball hard and still make it fall inside of the court-lines.

The height at which the ball should be taken depends on the height of its bound, which in turn depends on the hardness of the court. On most grass courts, the bound in fast play reaches about to the knee, and this is the best height at which to hit the ball. Even on harder courts, of "dirt," sand or boards, it is better to let the ball drop to this height before hitting it, although the longer bound keeps the player further back in his court, which is not often desirable. Sometimes, it is necessary to hit the ball at the level with the hip to prevent being driven too far from the net, but no stroke should ever be made underhand with the ball higher than the hip.

The eyes should be kept on the ball all of the time as it approaches; even up to the time of hitting it, one should watch

the ball, not the racket or the opposing player. It is sometimes necessary to look up for a second to see the direction in which it is to be placed and where the opponent is, but this should be done before the stroke begins, not while it is being made. A player often reads his opponent's intention from the direction in which he is looking, and if one looks where he plans to place the ball, he may betray his thoughts and the opponent anticipate the stroke by going directly to the spot.

Perhaps the best way for one who wants to play tennis well, is to practice strokes against a blank wall—high fence, the side of a house, or some obstacle of that kind—batting the ball up against it again and again, hitting it from the bound each time it returns. Nothing can possibly afford better practice than this kind of play. Experts use it constantly in the spring, and find it a better way of getting into form, of “getting their eye on the ball,” as they say, than even regular practice on a regular court. The ball always comes back at the corresponding angle to that at which it struck the wall, and with much greater regularity than any human opponent could return it.

In all forms of practice, whether against a wall or an antagonist, the method of making the strokes should be kept in mind all of the time. Every stroke made in bad form is just so much wasted practice, and if a faulty style is contracted, the longer it is allowed to continue without correction, the more dangerous it becomes. Bad form in lawn tennis is as difficult to overcome as bad habits in anything else. Some of the simplest and least offensive of mannerisms, too, often develop into injurious habits if not checked at once.

Holding the racket loosely in the hand, swinging it or twisting it sidewise before making a stroke, jumping a little just before the stroke instead of while it is being made, taking the eyes off the ball, and even momentary lapses of indifference while playing are all dangerous habits to contract, and each will develop into a bad fault if not checked at once.

The questions of placing the ball and of covering court so as to prevent the opponent from out-placing you are very important, and both permit unlimited study; in fact, the cleverest of

tournament players never stop working on these problems. After every stroke from one side of the court or the other, one should immediately hurry back to the centre of the base-line, so as to be ready to start for the next ball, no matter where it is placed. If she is caught too far away from the centre, the opponent will surely win the stroke by placing the ball to the other side of the court and out of her reach.

Not long ago I discovered an expert tournament player repeatedly stood still after making a stroke from one side of the court, and waited to see the result of his play, instead of hurrying back to the centre of the base-line in anticipation of his opponent's next stroke. By this error, he constantly left his court open at the opposite side for a well-placed ball that would win the point.

When badly pressed for time or too far out to one side of the court to get back again, a lob is always useful, and it gives a player plenty of time to get back into position for the next play. Beginners should all learn to lob well, as this is an invaluable stroke and can always be resorted to for a defense.

An overhand service is practically necessary for those who want to play the game well, although some players learn to serve underhand with such a sharp twist that it is difficult to make a hard return from the low erratic bound. The ball should be thrown up in the air as straight as possible over the right shoulder for the overhand service, and hit just as it pauses in the air before falling. To throw it much higher and hit it as it falls is much more difficult and less effective.

An overhand service should be made as fast as the player can control the ball within the boundaries of the proper court. The second service, too, after a first fault has been served, should be made in the same way but slower. To serve in a different way only tends to upset the accuracy of the first service as well as the second, and weakens both.

How to Make the Most Important Strokes.

I.—THE SERVICE.

Having first mastered the rudiments of the game, one is soon led on to the more intricate points of play. In hitting the ball, there are very many variations possible, of course, but the whole list of strokes can be divided safely into four classes: (1) The service, (2) horizontal ground strokes, (3) the volley and the half-volley, and (4) the lob. Let us consider the service first, as it is the opening stroke in every play.

The service is restricted by the rules of the game more closely than any other play, and it is well that it is so, for there have been many attempts to take advantage of the attack given to the server by his being allowed to make the first stroke of each series. The service rule (No. 6) has had to be changed repeatedly to keep the server from infringing on the rights of his opponent. In the modern game it is considered a great advantage to get up the net to volley as soon as possible after the service has been delivered, and the American experts a few years ago carried this plan of attack so far that they served on the run, and a new rule (that which is at present in force) had to be adopted to stop their onslaught.

It has always been the intention of the rules to make the server stand at the base-line when he delivered his service, and the wording has been changed only to define this position more closely, so that he shall remain there until after the ball has been delivered. Otherwise, he is allowed to hit the ball as he pleases, and it is a good service if the ball drops in the service-court diagonally opposite him, and does not touch the net in crossing. Naturally, the faster the service the more difficult it is to return, and all efforts have been directed toward getting greater speed in the delivery without forcing the ball to strike out of the required court.

There used to be many methods of underhand twist services



A GOOD OVERHAND SERVICE FOR WOMEN.
(MRS. G. W. HILLYARD.)

used, much like those of rackets and courts tennis, and it was intended to make the ball bound up from the ground at an erratic angle that would make it more difficult for the opponent to return. These twist services passed out of use, however, when faster return strokes and harder drives came into use and have been only occasionally revived for special uses, sometimes against women in mixed doubles, or occasionally against a player who finds it difficult to hit the heavily cut ball. It is also occasionally useful to serve an underhand twist ball when the sun shines brightly in the server's face, and makes it difficult to look up for an overhand service. The American twist service is a newer and more scientific development of these old-fashioned twist deliveries, but the ball is served overhand and very fast. A special chapter has been devoted to this one play.

The most useful and commonest service used by good players is an overhand delivery almost straight with a slight cut to the right that keeps the ball from "sailing" in the air. A ball always travels faster and truer if it turns on its own axis, and this same principle which is used in "rifling" guns is brought into use in serving a tennis ball. The player should reach as high as possible, even serving up on the right toe, and strike the ball at the extreme length of this racket. The server should reach up a little above the ball, too, so that the pressure of the racket shall be slightly on top as well as on the right side of the ball. This top twist helps to bring the ball down into the court, when sometimes it might otherwise go out and be a fault.

This overhand cut service curves slightly to the (server's) left, and its tendency is to draw the opponent out slightly in that direction in order to return it. If a player can combine this service with a "reverse" service, which is made by drawing the racket across the ball in the opposite direction, from left to right, he can fool the adversary wonderfully by varying the two, and keep him guessing almost constantly. This gives the server a big advantage, for the opponent is unable to anticipate his delivery and finds it more difficult to make a strong return.

It is important to have a strong second service, and too many

players neglect this feature of their play, serving so slowly and "softly" in their anxiety to be certain to avoid the double fault, that their second service is very easy to kill. The second service should be as nearly like the first as possible, only moderated enough to be certain of not missing making a double fault. I know a number of good tournament players whose game shows the woeful weakness of a second service that can be killed often by a fast drive from the slow high bound. It is doubly important that the second service should be as long as possible, that is, following as near the service-line as possible; and that it should not bound high so as to offer a tempting mark to drive at.

Many players try for exceptional speed with their first service, when they know that the chances are heavily against their making the stroke count. The result is that the second service, when they miss, is so much softer than the first that it is easy to kill. It is better to make the first a little slower and be more sure of bringing it in, and then to make the second more nearly like the first if the latter should be a fault.

If the server plans to run in on his service and to volley the opponent's first return, there are other considerations than mere speed and twist to consider in making the service. Direction and placing are even more important than either speed or bound, for the ball must be carefully placed to make the server's position safe at the net. It is generally the safest in running in, to serve to the centre of the court, for it is always more difficult for the opponent to pass a volleyer at the net from the centre of the court than from either edge, where the side-line is always open.

If the opponent is particularly weak on his backhand, or if he stands well over toward the centre of the court to anticipate a delivery to this point, it is well to vary the direction of the service to the extreme edge of the right-hand court. This will often force him out of court to make the return, and its unexpected direction will make it more difficult for him to handle the ball well.

II.—THE GROUND-STROKE.

At least three-quarters of the game is made up of ground-strokes, and upon a player's skill in this department of the game depends much of his success. It is impossible to play the game well without good ground-strokes, and very few men have ever succeeded with only volleying to back them up. To win a rally by volleying at the net requires, first, good ground-strokes to make the opening when the volleyer will be safe at the net. To be sure, there is only one stroke in each rally that is required by law to be played off the ground—the return of the service—but few men are able to volley so well that they can reach the net safely after every service and first return, and it is practically necessary to earn the position for a smash or volleyed ace by good ground-strokes that lead up to the winning position.

The straight horizontal drive is the most useful of all the ground-strokes, and this can be made either forehand or backhand. It needs a full, long swing, a clean-hit ball and as much body swing and "carry through," as the golfers call it, as it is possible to get in the stroke. The ball is best taken at about the height of the knee, and a little "lift" put on it at the end of the stroke. Many players have a habit of striking the ball much higher than the knee, often higher than the waist, but this not only makes the stroke more difficult to execute, but it also increases the chances of putting it into the net. In making this stroke, I want to emphasize once more, however, the importance of getting the weight of the body into the stroke and of throwing it forward so that the weight follows the racket as long as possible.

Most beginners in lawn tennis have a tendency to push the ball rather than to hit it, and the effect is to ruin what might otherwise be a good stroke. The impact against the ball should be clean-cut and sharp, but the racket should follow the ball until it is well started on its course.

The drop stroke, often erroneously called the "Lawford" stroke, is an exaggeration of this side-stroke that has become



THE WAY TO MAKE A "CHOP STROKE."

very commonly used; in fact, more often seen than the true stroke. In making this, the racket meets the ball with a diagonal sweep, striking it a glancing blow with a sharp up-twist that drags the ball along with it and gives it a sharp spinning motion, like a "follow" shot in billiards. By some tennis players this is so much exaggerated that the ball describes a sharp, rainbow-like course as it crosses the net and dips quickly after crossing, so that many balls that seem to be going out of court ultimately fall inside the boundaries.

This stroke is very useful for passing an opponent at the net, for it is doubly difficult to volley a falling ball like this sends, but against an opponent at the back of his court, it takes unnecessary risks without proportionate gain, for it accomplishes no more, save, possibly, a little greater speed than the straight side-stroke.

The chop-stroke is another method of striking the ball after it has bounded which has found a great many devotees. The ball is hit with a downward chopping motion like that made by a woodsman swinging an axe. The head of the racket is bevelled and meets the ball at a sharp angle, striking a glancing blow that gives the ball a sharp back-spinning motion, opposite to that given by the drop or lift stroke, and like the spin of a billiard ball after it has been played for a draw-shot.

This stroke is a corruption of the English method of striking under the ball rather than over it, as so many Americans do, and it has been exaggerated until some players "chop" nearly every ball they play. The tendency of this stroke is to keep the ball up, rather than make it drop into court, and unless it is played slow or from well above the net, it often sails out of court. The player has a little better command of the ball, perhaps, but less speed than with the straight side-stroke.

In backhand play, the straight side stroke is the most useful of all but more difficult than the chop-stroke. The drop-stroke is very difficult to play on the back-hand side and few players ever use it except on the forehand, while the cut or chop stroke is the easiest and most often used on the back-hand. The Eng-

sh players use it a good deal, cutting much more in their back- and play than 'on the other side of the body.

The chop-stroke is the most difficult of all to handle at the back of the court, because of the twisting ball and low bound, but it is very easy indeed to volley if an opponent plays it when one is waiting at the net. The straight side-stroke is the best of all for driving against a base-line player and the drop-stroke for passing. It is difficult, however, to combine both, and few players have succeeded in doing so. A man must choose one or the other to gain success and stand or fall by that. It takes a wonderful amount of practice to perfect either stroke and if one divides his time and attention between two different styles, he is likely to imitate the "Jack of all trades, master of none."

In receiving the service, the ground-stroke must be used always, and it depends upon the style of the opponent which is the best play to use against him. If the server runs in to the net to volley after each service, a side-line passing drive or a short cross-court stroke will generally prove the best answer to his attack. Such a return makes the ball drop so soon after crossing the net that it is very difficult for him to volley the stroke, and even if he does succeed, he generally hits the ball below the level of the net and his volley becomes less dangerous because he must lift the ball up again somewhat in order to keep it from going into the net. If he volleys too well to pass, then a lob must be resorted to.

If the opponent is a base-line player and does not run in at once to volley, the drop-stroke is not so useful for attacking or opening upon an attack for a winning volley at the net, as either the chop-stroke or the straight side-stroke. It adds to the chance of error without increasing the force of the attack. The drop-stroke spins out a good deal after it has struck the ground and loses much of its speed when it rises the second time for the opponent to return, while the chop-stroke "shoots" faster than ever from the ground and the straight side-stroke holds most of its place after bounding.

The question of length is of utmost importance in making good ground-strokes, and for this purpose the straight side-stroke is the most powerful of all ground-strokes. Both the chop-stroke and the drop-stroke depend on their twist to keep them within the boundaries of the court, while the side-stroke is aimed for the spot it is intended to strike. In using the drop-stroke, the player aims many feet beyond where he expects the ball to fall, and depends upon the drop to bring it into the court, while with the chop-stroke, it is just the reverse, for the player has to aim the ball many feet short of the base-line in order to bring it inside of the line, as the under-twist makes the ball "sail" somewhat.

For all-round uses, therefore, the straight side-stroke is the most useful, but it does not follow that no cut should ever be used with it. On the contrary, it is possible to use a little of either cut with this stroke, and thus get part of the effect of either of the other two strokes, while with either of the exaggerated styles, the other is almost impossible to acquire. Many players who have mastered the straight side-stroke, and who follow through after the ball the longest in making it, vary its use a good deal by twisting the ball slightly according to the position of the opponent.

Against a man at the net, they finish the stroke with the racket drawn somewhat up toward the left shoulder, and this gives the ball a top twist that makes it drop slightly after crossing the net, although not nearly so much as with the regular drop-stroke. When the opponent is at the base-line, a little under twist keeps the ball from bounding high and makes it shoot so from the bound that it will be forced further away and find it more difficult than ever to make a safe return. With this straight side-stroke, the player has the best control of the ball that can be secured, and if he follows it well with his racket in hitting it, he can direct the ball very closely to where he wants it to go.

III.—THE VOLLEY AND HALF-VOLLEY.

The most thoroughly American stroke of all those which are used in lawn tennis is the volley, and much of its modern development is due to American methods. Our players volley with much more aggressiveness than the Englishmen and their attack is much stronger and more effective in consequence. A great part of the volleying abroad is underhand, the ball being struck from below the level of the net and must be lifted back over its top again before it can seek a vulnerable point of the adversary's court. This naturally lessens its power of attack and makes it more of a defensive stroke.

Americans, on the other hand, rush in much closer to the net and volley sharper and faster, hitting the ball at the top of its flight and driving it downward with a sharp stroke. They smash much more, too, than their English cousins and seldom fail to take advantage of an opening for a killing stroke, when the foreigners often satisfy themselves by keeping the ball in play with underhand volleys that do not kill.

My advice to any young player who wants to learn to volley underhand is—don't do it at all. At best it is a defensive stroke, and a volley should never be allowed to be defensive. If driven back from the net so far that it is impossible to reach the ball before it has fallen so low as to make an underhand volley necessary, it is much preferable for the player to fall back still further and make a ground-stroke instead of a low volley. The position is stronger and stroke is likely to be much better.

Horizontal volleying is the most important of all, and upon this skill at that depends a large part of a player's success at net play. Once safely ensconced at the net, all fast returns offer horizontal volleys and only the lobbed balls give openings for overhead volleying or smashing. The most important point in horizontal volleying is to hold the wrist very stiff and to meet the ball with a rigid racket that does not give at all from the impact. One should never volley upward either; it is better to strike a little downward and if the ball is too close to the net to direct it downward at once, the face of the racket can be



LARNED'S BACKHAND STROKE.

bevelled slightly upward to keep the ball from going into the net.

The racket should be drawn back eighteen inches or two feet as the ball comes toward you, and then brought forward with a quick, determined stroke that meets the ball with a sharp blow and follows it as far as possible. To merely stop a ball without striking it, or even after striking it, to relax the grip of the racket so that it gives, when the ball meets it, means to rob the volley of all its life and snap, and to make a weak return of the stroke. Except for the tricky "stop-volley" which is rapidly coming into use for grass court play against a baseline player, the ball should always be hit firmly and sharply and the direction controlled by turning the wrist in one direction or another at the last second before striking the ball.

These stop-volleys are made by close net players by holding the racket rather loosely and merely stopping a fast drive at the net and allowing the ball to fall just over into the opposite court and drop there lifeless with little or no bound. If the opponent is far back in his court and not expecting this play, he is seldom able to get up to the net in time to reach the ball before it bounds the second time. It is possible to bring off these stop-volleys successfully, however, only when the volleyer is very close to the net, so close in fact that he is in danger of having the ball lobbed over his head. The correct play against a volleyer who gets in so close as this is always to lob over his head, for he is seldom able to back away in time to volley the ball, and generally has to let it bound and return it with another lob.

Overhead volleying or smashing is much like serving. The player should reach as high as possible over his head and strike the ball from over his right shoulder with as much force as possible. In smashing, the weight should be thrown far forward and the additional impetus of the body's swing added to the force of the blow. The object of a smash is to kill a dropping ball by the sheer speed of the blow, rather than the accuracy of its placing, but many well-smashed balls are returned by the opponent, and the player should not lose his balance entirely, for then he

will not be ready for the next stroke in case his antagonist should return his first smash.

It is never safe to risk a smash if behind the service-line, and a ball that is going to fall further back than that should be volleyed rather than smashed. Smashing is very much overdone anyway. It is quite unnecessary to smash many short lobs that come to a player during the course of a game, for an ordinarily fast overhead volley to some remote part of the court where it is well out of the reach of the opponent is quite as effective as a smash, and reduces materially the chance of error without weakening the chances of winning the ace. When a volley will kill the ball, a player should never risk a smash or waste his strength on the play either.

Half-volleying is only a makeshift at best to cover up a mistake in position. A player should never half-volley if it is possible to make any other stroke. He should go back and play off the ground, or run forward to meet the ball and volley the return. Some of the English players half-volley aggressively from choice, even when it is possible for them to avoid the stroke, but this play has been fostered and practiced because of the volleying position of the Englishmen, many feet further from the net than that which the Americans prefer. The consequence is that many balls drop at their feet when they are in their customary position for volleying, at the service-line, and they get used to half-volleying instead of shifting position to get the ball either on the volley or after it has risen well from the ground.

IV.—THE LOB.

The lob is a stroke that used to be considered only useful for defence, but modern American methods have brought it into common play both for attack and defence, and it has now become recognized as a general stroke of the game. Primarily, it is used either to get the ball out of the reach of an opponent at the net waiting to volley it, or to save time by knocking the ball high into the air while you get back into position or recover your "wind," if out of breath.



START OF A BACKHAND STROKE.
MISS MARION JONES.

Some players find it difficult to kill a lobbed ball, and in a tournament match the ability to lob well may prove of great advantage against an antagonist. If hard pressed, it also furnishes a breathing spell that may be just enough to save the set. The ball should be played high into the air and well back, in the opponent's court. The lob short is sure death, and one had better not lob at all than to lob short of the service-line. The ball should be hit with confidence and with force behind it, not hesitatingly, as though the player were afraid the stroke would be a failure. This uncertain way of lobbing is the most dangerous of all.

Of recent years, however, still another use has come into play for the lob, and this is the result of the American habit of getting in close to the net to volley. Once the opponent gets in closer than the usual net position, when less than ten feet from the net, the overhead attack can be started by lobbing, and he can quickly be driven away from his advantageous position. A low lob, just out of his reach, sometimes scores a clean ace, and even a high one will often force him to turn and run back in his court to return the ball.

A young player should always practice lobbing enough to be certain of the play. It is always useful and one can never tell when he will have to bring the stroke into use. Nothing is more demoralizing, too, than to lob short and have the ball killed so hard that you have not a chance to reach it. Before an important match, it is a good plan to practice lobbing for some time, and the question of length should be watched closely, for a good lob should always fall between the service-line and the base-line—better yet, within ten feet of the base-line.

I have often spent an hour with a patient friend on the other side of the net, practicing just this one stroke, and the result justified all my hard work, for it gave me command of a play that served me in good stead whenever I got into any kind of difficulties. It is the most perfect defence that can be found, and against any but a very strong smasher, it often becomes a strong attack.

The American Twist Service

There has been a good deal of mystery surrounding the American twist services which have recently become so prominent in the international matches. As a matter of fact, there should be no mystery at all in regard to this play, as it is simply a scientific development of the common underhand twist strokes adapted for overhead play with the additional speed which has made the new stroke so formidable. It is a common error to call these deliveries "reverse twists," for, as a matter of fact, the only reverse twist overhead service in use among the experts is that delivered by Champion Whitman, while the twist service used by Davis, Ward and Alexander have all the natural out twist. As Davis is a left-handed player, his service "breaks" from the ground in the opposite direction from those deliveries by right-handed players.

Ever since the early days of baseball the scientific theory of curving a ball in the air has been well understood. The top of a carriage wheel travels faster than the bottom, because its axis is moving ahead all of the time, and in the same way the friction on the side of a ball which is twisting on its own axis is greater on the side which is going fastest through the air—the right-hand side in a right-twist delivery and vice versa. The rougher the surface of any spherical body the more it will curve in the air, because the friction becomes greater against the particles of the air itself. The rough felt covering of a lawn tennis ball causes more friction than a leather-covered baseball and consequently the tennis ball curves more in the air.

The secret of success in making this new twist service is not to make the ball curve so much to one side or the other as to curve downward in its flight like the "drop" of a modern baseball pitcher. It is necessary to make a tennis ball drop quickly after crossing the net if it is to be served with much speed and

still strike within the boundary of the service court. To accomplish this the ball must be hit on top as much as possible, and the secret of the new twist service lies in reaching *over* the ball and striking it from above as well as one side. The racket strings are drawn across the cover of the ball as much as possible, the ball taking the strings near one edge of the frame and leaving at the other side. To do this a very quick side motion is required, and it is this that gives the ball its rapid spinning motion.

It has been a mystery to many why a tennis ball should bound in the opposite direction from its curve, but if one will apply the principle of the "English" in billiards he will understand at once the reason. In the overhand out twist, as served by Ward and Alexander, the ball spins sharply on its own axis, combining the effect of right-hand English and the "follow" shot in billiards—in other words, it spins exactly like a billiard ball when hit for a follow shot with right English. It curves to the (server's) left in seeking the line of the least resistance (which is a common rule in all physics) because of the greater friction on its right side, and it curves downward in its flight because of the greater friction on its top side.

Instantly the ball strikes the ground it breaks to the right because the spinning motion drags it that way when it comes in contact with the ground, just the same as a billiard ball with right English will rebound to the right when it strikes the cushion of the table. Thus we have the double motion in this new twist service, which has puzzled so many who have played against it. The reason why its effect has been greater with American than with English balls is because the surface covering of the American ball is rougher than that of the English, and the resistance in going through the air becomes greater in consequence. The ball gets a sharper twist from the racket because the rougher cover makes it cling longer to the string.

The service used by Whitman has the reverse twist, his racket removes from (his) right to his left, the ball curves from left to right, and breaks again to the left as it leaves the ground. Davis's service has the same curves and the same effect as Whitman's, but Davis reaches very much further over the ball, hitting

it faster and making it bound deeper. It is an out twist and not a reverse twist, however, because Davis plays with his left hand and the racket travels away from his body, not across it. The service used by Ward and Alexander is an out twist made with the right arm, the racket traveling away from the body to the (server's) right; the ball curves from right to left, and breaks sharply to the right again after leaving the ground.

In Whitman's case the racket travels across in front of his body and the tendency in making this reverse twist is to throw the server off his balance, and to make it doubly difficult for him to run in to the net to volley the first return. In the case of the out twist, it is just the reverse, and Ward is said to have invented this service in an effort to get the impetus of the racket to help him get in motion quicker after serving in his hurry to reach the net for the volleying position.

In each case where this out twist service has been successful the server bends very far backward and drops his racket down, far behind his back before making the stroke. In each case, too, he reaches well up over the ball, and the more he hits it on top, the more speed he can secure and still make the ball drop enough to fall inside of the service court. There is a tendency also to ease up slightly on the inside edge of the racket so that the strings will follow the ball longer and give it a sharper twist in making the stroke.

This new American twist service is physically very severe on its users, and tires the muscles of the back and stomach more than those of the arms, because of the sharp bending backward as the stroke is made. There is no secret about it, however, and the fact that Alexander has successfully learned to use it simply through watching Ward make the service and practising it steadily is proof that any other player can learn this stroke who will give enough time and conscientious effort to learn it. The keynote to success, however, lies in hitting the ball well on top with a very sharp twist, the ball rolling across the entire face of the strings before it leaves it, and in striking it very much harder than would be possible to bring an ordinary service within the court.

Styles and Skill of the Expert Players.

No matter how much one may have learned from books of instruction, the best method of learning to play lawn tennis well is to watch some expert tournament player at work, and then to copy his style. Many men have become experts themselves in just this way. Not more than once in a hundred times does a player become skillful and win much success at the game without playing in good form. That is one of the first essentials to success, and it is generally safe to copy the style of any clever player.

Larned, the present champion, is a model of good form in all of his plays, but few players have been able to copy his style. He is a natural, easy, graceful player, to whom every stroke seems to come easy. He seldom seems to make any effort, yet the ball travels fast from his racket and with unerring precision in the direction that he wills it. He hits the ball with a long, graceful sweep that directs it accurately, and his placing strokes are little short of marvelous.

Ex-champion Whitman is an expert of another type. He is a crafty, cautious player of the opposite style from the dashing Larned, and a much safer player to copy, for his style is one that wins the greater number of matches, beside the fact that it is cultivated while that of the champion is born in one. Whitman crouches a good deal in making his strokes, particularly on the backhand side and he slices under the ball more than most American players do. He is particularly free in all his strokes, however, and has a more certain command of the ball than even Larned.

Davis is a thundering hard-hitter who takes wonderful risks, often unnecessary ones. Where one player might succeed at this

style of play, a hundred would fail—yes, a thousand. Less strength in the stroke, a little less speed in smashing and fewer risks taken in placing ground-strokes into the furthestmost corners of the court are likely to earn quite as many successes.

Ex-champion Wrenn is perhaps the highest ideal of a winning player, and if a young player wants some style to copy, his is the best. He has all the defensive genius of Whitman, with a stronger attack and a much better net game. Wrenn uses his weight in the stroke better than does Whitman and manages to make the ball travel faster without materially greater risk of error. He was a master of defence at his best, and also a master of attack, and best of all, a general in tactics. One could not do better than to copy his style.

The English experts, like Mahony, for instance, have a different style of playing their backhand strokes from that most used in America, and it is much safer although perhaps not so brilliant for passing strokes. They carry the wrist very low in backhand play and the head of the racket passes under the ball after making the stroke, instead of following it so long as do the American rackets. This style has the merit of being much more certain of return than ours, but the ball is not so easily turned off one way or another.

Hobart is another hard hitter, but of a different type from Davis. He does not take so many chances as the St. Louis expert, and confines most of his efforts to hard ground-strokes from the base-line. The ball travels fast and low with a sharp up-twist, like the famous old Lawford stroke, but it has a long bound and is not difficult to return, if the opponent is active and certain enough in his returns. The weakness of Hobart's style is his lack of volleying, but his ground-stroke might well be copied if one can add good volleying to make the net game an important factor as well.

Stevens is the typical base-line player of the country. It is literally true that he never volleys at all in a match. He has a perfect command of the ball after it has bounded and he hits it both hard and accurately. This style of base-line play is all right for defence, if the player has enough strength to last almost



THE ENGLISH STYLE OF BACKHAND.
(H. S. MAHONY,)

indefinitely, but it is very weak for attack. Its chief weapon of attack is the passing stroke, and Stevens always tries to draw his opponent into the volleying position near the net so that he may pass him with a fast ground-stroke or lob over his head.

Ward is the reverse of Stevens, practically all of his skill lying in his volleys, and he runs into the net at every opportunity to take the volleying position. His ground-strokes are inclined to be weak, and against a good passer he is always at a disadvantage because he cannot hold up his end if kept away from the net by the accuracy of his opponent's passing. Once Ward reaches the ball near the net, however, it is pretty certain to be killed, for he has a great variety of killing strokes on the volley, and uses them with rare judgment. Ward's style is not a good one to copy, unless one has learned to play ground-strokes first, for Ward's skill at volleying has reached a point that few can ever reach, and without it he would not be very good.

Among the women players, Miss Marion Jones's style is perhaps the best to copy. She hits the ball with a long free sweep like that of a man, and gets more speed in her returns than most other women players. Miss Moore, the champion, has not so much speed in her backhand strokes, which slice the ball too much, but her forehand drives are fast and generally well placed. She is probably the best volleyer in the country among the women, too. Still, for all-round skill and style, Miss Jones is the better model, for her strokes are made in better form than those of the champion.

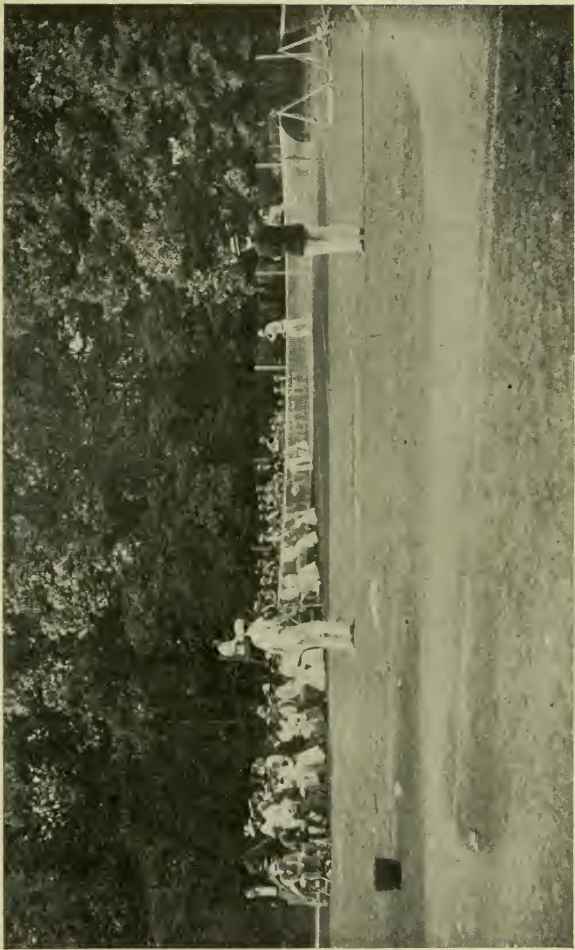
However, it is safe to copy almost any successful player, but one thing should always be borne in mind. For a young player just learning the finer points of the game: It is the height of folly to confine all efforts to one style of play or to one particular stroke. It is in the variety of strokes that the greatest skill lies, and the more a player is able to vary his strokes, the better will be his success in tournament matches.

How to Build and Keep a Court.

Nothing is more important for the full enjoyment of lawn tennis than a satisfactory court, and none of the other accessories of the game offers a wider variety. Many important considerations come up even after the kind of court to be built, and the cost, have been decided upon. No matter how much is to be spent on the ground, nor what the surface is to be, the most important things to consider first are space, light and drainage.

The back-stop nettings should never be nearer than fifteen feet from the lines, and if good players are expected to use the court, particularly if tournament matches are to take place on it, the space behind the base-line should be 21 feet at each end. At the sides at least 6 feet, if possible 12 feet should be allowed beyond the side-lines for doubles of each court. A well-appointed court for tournament play should be centered in an unobstructed space of not less than 60x120 feet. Wire back-stop netting 10 or 12 feet high should surround it at these distances from the lines. If there are two or more courts together, there should be at least 12 feet between their side-lines, and one netting can surround all.

In selecting a site for a court, a spot should be chosen where there is always plenty of sunlight, and where at no time of the day does any shadow cross the ground on which the court is to be laid. Green or black is a preferable background to play against, but any dark and even color will do. A court should never be laid out with any very light background within a short distance at either end, or close at either side. Nor should a site be selected with a badly mixed or moving background. Shade trees are useful near a court, only if their shadow is a solid one, not constantly checkered by flecks of sunlight glittering through moving branches, which constantly confuse the players.



A MIDDLE STATES CHAMPIONSHIP MATCH AT THE ORANGE L. T. C.

Never should they be allowed near enough to cast any shadows on the playing surface.

One more cardinal point should be remembered. The court should invariably be laid out north and south—never east and west. If this warning is disregarded, the player at one end or the other will be hopelessly blinded by the sun.

The question of drainage is one of the most important considerations in selecting a site of this kind. On the natural facilities depends largely the cost of laying out a good court. If the natural soil be sandy and well drained, or if it is on high ground which slopes away near by, artificial drain-pipes will not have to be put in, and this saves much of the cost, but if it be thick clay that holds moisture long, or on low ground with neighboring slopes that drain toward it, the court will be useless for many hours after each rainfall unless artificial drain-pipes are put in.

After the site has been selected, it must be decided whether a grass or "dirt" court is to be built. If the natural sod is luxuriant and the soil favorable for its growth, or if the court is not to be used enough to wear off the grass, a turf court will generally be found preferable, but if the ground is to be constantly in use, the sod will wear off and become "bald" unless there is space enough on the lawn to shift the court frequently.

When good turf cannot be had or will not stand the wear, a substitute must be found, and sand or gravel courts are most often used. On well-drained land, one can sometimes cut away the top surface, level the ground and roll it until well hardened and the court is ready for use, but more preparation is necessary to build a permanent court that will not be constantly losing its proper level.

For such a court the earth should be cut away to a depth of one foot if no drains are required. After leveling it carefully with a spirit-level, to be sure that the grade is right, a layer of six inches of broken stone should first be laid and pounded down hard. Ordinary trap-rock used for macadamizing roads is perhaps the best for this purpose, but any broken stone, ranging in sizes from a walnut to an egg, will answer

the purpose. This should be covered with a three-inch layer of coarse gravel or fine broken stone, which should be thoroughly pounded and watered for several days before being covered. Before any surface is put on the court, the greatest care should be taken to see that the foundation is perfectly level, or, rather that the center of it is not more than eight or less than four inches lower than at the ends. Any holes or depressions that appear from rolling and pounding should be filled in before it is covered.

Every well-built court should be graded toward the net, and a drain-pipe, well protected with broken stone should be sunk at right angles to the court, dividing it in halves at the net. Toward this gutter the surface of the court should be drained and the drain-pipe in turn should be tilted enough to carry the water to one side well off the grounds, into some lower spot, or be connected with some sunken hogshead or regular sewer. A surface grade of six inches is enough to keep the average court dry. The base-lines therefore should be six inches higher than the ground at the net, and if the soil is sandy enough to take up most of the water from the average rainstorm, no drain but that under the net will be necessary.

Many courts are drained off to one side, while others have all the grade from one end to the other, but in either case the playing surface of the court is not true, and expert players will soon notice this fault. The surface is also gradually washed away by storms. A grade of six inches from either end down to the net not only leaves the court true for play, but is hardly noticeable. The drain under the net is easily kept free, if well filled with broken stone, and it carries off all the moisture from the court. In the heaviest storms a small pool of water settles here, but the drain soon sucks it all in and the surface soon dries up.

If artificial drainage is necessary to keep the court dry, drain-pipes can be laid in the foundations of the court. This can be done by getting six-inch stone sewer-pipes cut in halves, or stone gutters used on tiled roofs, and sinking them in the ground, open side up, immediately under the foundation of

broken rock. Two or three should be placed on each side of the net, parallel with the side-lines and graded down toward the center gutter under the net. These pipes should be filled with coarse pebbles or cracked stones about the size of walnuts, and they keep the drains from filling up with earth. The water will then trickle through the coarse sand and stones to the pipes and be carried down to the main gutter and so off the court.

The covering for a gravel or sand court should be not less than three nor more than six inches in thickness, and of sandy loam and clay mixed. The proportions depend on the quality of the clay. If it is very binding and sticky, two parts of sand to one of clay are preferable, but for the average ingredients they should be mixed about evenly. When the court is finished, if it is found to be too soft but dry, more clay should be added; while if it drains poorly and stays muddy too long after rain, or its surface is too sticky for the player's feet, more sand should be added on the surface. When a court is finally covered, it should be thoroughly watered and rolled alternately twice every day for two weeks before it is played on at all, and any depressions or uneven spots corrected as fast as they appear from the settling. After the first heavy rainstorm it should be gone over and releveled most carefully, for then it is most likely to develop new faults.

The fine seashore sand will seldom be found satisfactory for the surface of a court, for it works loose too quickly under the players' feet, and can only be made to bind when mixed with a larger proportion of clay, which will make the drainage more difficult, as water percolates very slowly through clay. If the soil upon which a court is being built is very rich and worms promise to work through to the surface above and injure the court, it is well to lay a layer of fine cinders, those from a railroad engine preferred, between the foundation and the sandy surface layer. These cinders effectually prevent worms from coming through to the surface. It is also well to use coarse sifted ashes mixed with the stones in the drain-pipes.

The construction of a grass court is less difficult, but varies much more in process. If cost need not be considered, it should

be built by a professional, and will be laid on deep-laid foundations; if it is desired to build an economical court on an available lawn which is fairly level, the cost will not be heavy. The sod should first be carefully removed in squares of about eighteen inches, from a space at least 50 by 100 feet, cutting down to a depth of about six inches. The ground should then be turned with a spade to a depth of eighteen inches or two feet, and after all stones have been removed, and the earth carefully raked over and leveled, it should be packed and rolled with a heavy roller. It cannot have too much leveling and rolling, and the rolling should be kept up for several days with plenty of soaking by rain or hose-pipe. Any inequalities which the heavy pressure of the roller produces should be filled in or cut down before the sods are relaid.

After the ground has been rolled sufficiently the sods should be replaced. In doing this it is important to get the edges close together, so that no seams or open cracks can be found. These sods should be relaid in the afternoon and well drenched with water. The next day the ground should be rolled again; and this should be followed by alternate drenching and rolling for several days. Even when the ground finally appears firm and level, the court should not be played upon until new blades of grass appear in considerable numbers. If depressions appear, the sod at that spot should be lifted, fresh earth inserted to the proper grade and the sod replaced, watered and rolled till level and flat again.

Bad spots are often found where the grass is thin or where malignant weeds obstruct its growth, and in this case fresh sods should be bought or cut elsewhere and substituted. Sometimes large patches of ground must be renewed in this way, but it will be found much less expensive if all the turf is bad to sow the new court down with lawn seeds, and seeds will often help out thin spots in the grass if the court is not to be used too soon after the sowing. It is better to make a grass court in the fall whether it is to be sown with seed or sodded. The winter storms will then settle it thoroughly, and after a little releveled in the spring it will be ready for use.

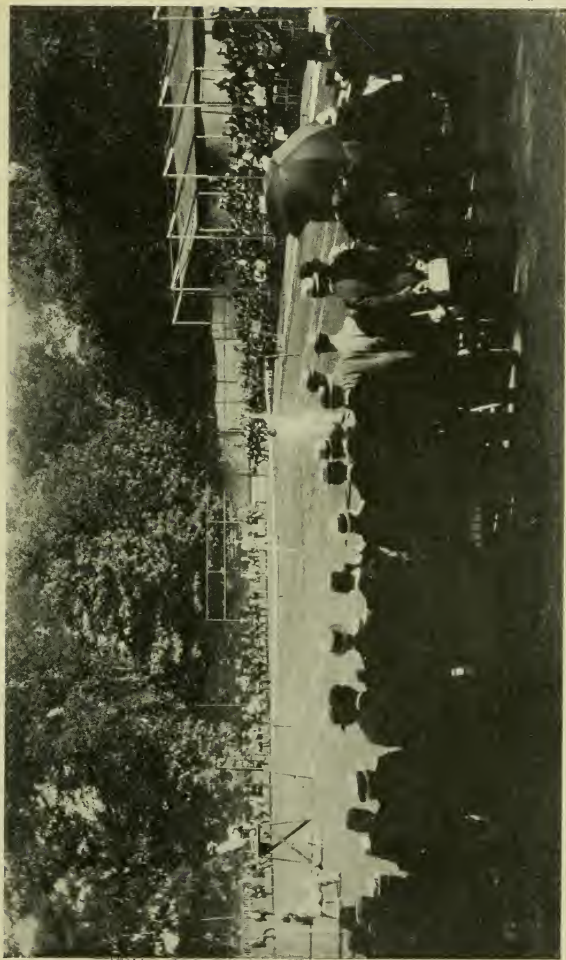
Grass seeds should be sown between the middle of March and the first of May, or better yet, in the autumn, between the middle of August and the first of October. It takes about 20 pecks of good lawn seed to cover a space 60 by 120 feet. The sowing should be gone over twice, the second time at right angles to the first. Clover seeds should be avoided, as this grass does not wear well, and guano should not be used for fertilizing, for it tends to bring up coarse blades in patches.

As soon as the young grass is high enough to be topped, a scythe or sycle should be used, being at first better than the mowing machine. After the new grass is well hardened, however, the latter should be constantly in use, never less than once a week, and in moist warm weather nearly every day. With every precaution weeds are sure to appear, but these can generally be held in check by constant mowing. The more formidable weeds, however, must be cut with a knife one by one about an inch below the surface, and care being taken to remove as much of the root as possible. A pinch of salt dropped on the cut root will generally stop the growth. When the turf becomes worn in spots a small shift in the lines of the court will relieve the pressure and enable the grass to grow again; at the end of the season all of the bare patches should be resown.

There are several other kinds of courts sometimes built when turf cannot be had. Instead of sand or gravel what we generally speak of as "dirt" courts are most often used. Cinders, clay, concrete, cement and asphalt are also sometimes used, while board courts are built under cover for winter use.

Concrete and cement are open to many objections. They are very hard on the eyes and legs, and often make the player's feet sore; the surface generally wears out the balls and shoes quickly, and it is also liable to crack with frost. Cinder courts are cheap and easy to construct, but the surface is so gritty that it burns the feet of the players and soon uses up the balls. They are also very dirty. Asphalt courts are expensive and much affected by heat and cold, sometimes even cracking with the frost.

In Australia court have been made of cracked blue-stone, while a cheaper substitute has been found in England in what is called a brick rubble court.



EASTERN CHAMPIONSHIP MATCHES AT THE LONGWOOD C. C., BOSTON.

Once the court is finally built and ready for use, it must be properly marked out. In every case, unless it be of grass, and the lines are to be constantly shifted to prevent bare spots, net-posts should be permanently sunk in the ground. They should be not less than two feet under the ground nor forty feet apart.

A double court contains every line used for singles, and so it is customary to mark a court for doubles, except occasionally for imported tournament matches in singles, when the outside lines are left off. In order to lay out a court properly the middle of the space should be measured and the two posts set down for the net. Then cord should be stretched along one side just inside the post and pegs driven down into the ground each 39 feet from the net. In order to prove that the side-lines are at right angles with the line of the posts where the net is to cross it should be proved by measuring with a tape-line or cord the diagonals from the opposite net-post to the corner peg at each end of the side-line, which should agree.

The pegs from the other two corners should be driven down next by measuring 36 feet at right angles from each end of the side-line already planned. Then you have a hollow square, but before marking any of the lines it should be proved again. The long diagonals, from corner to corner, should be carefully measured to agree, in order that the court shall be exactly rectangular, not diamond shaped. Each side-line and each base-line should be gone over again to prove its length accurate, and then the lines of this hollow square should be marked out. If the position of the court is not to be shifted it is a good plan to sink small angle plates to mark these four corners so that when a hard storm washes away the lines, they will not have to be laid out all over again.

The inner side-lines should be put in next, each parallel with the outer lines, and $4\frac{1}{2}$ feet inside, measuring them at the base-lines and at the net to prove them parallel. On each of these pegs should be driven down just 18 feet from either end, and then they should be measured the other way to prove that each is 21 feet from the net and 42 feet from that at the

opposite end. Across from each of these to that on the opposite side, should be marked the service-lines, and then dividing these service-lines in half, the half-court line should be marked, its distance being $13\frac{1}{2}$ feet from each inner side-line. The court will then be completed and ready for use.

A good dirt court should be swept, watered, rolled and freshly marked out after every eight or ten sets of play, and oftener in very dry weather. Instantly a depression is discovered it should be filled in and rolled down before playing is continued, for it is almost as dangerous for the players as the court to continue with it uneven. A court should never be rolled in the condition the players leave it after play. A player's heel raises a little lump; if the roller goes over this before it is swept down even again, a hard ridge results and the ball will bound unevenly from it. It should be swept over first, until all the lumps are leveled down, before the roller is allowed on its surface.

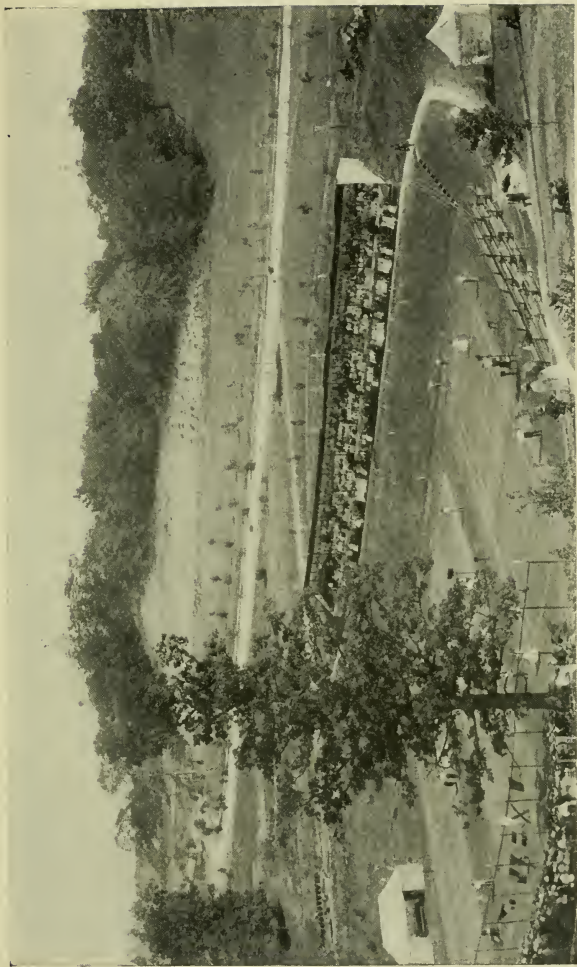
One of the best sweepers is made of a heavy joist of wood with a dozen thicknesses of old jute bagging or coarse cloth frayed out at the bottom edges, fastened to its bottom and trailing on behind it. This should be drawn over the court with a handle or rope several times. If it is pushed, the groundsman's feet will leave tracks after it; if he goes ahead the sweeper will erase them. Before the lines are marked out fresh, the old ones should always be swept off with a broom, but if the broom is constantly used along the lines in a parallel direction, it will gradually wear away little grooves in the court where the lines are and the balls will bound improperly from them. The sweeping should be done lightly across the court, at right angles with the lines.

A grass court cannot have too much care. It is advisable to wet it thoroughly several times a week and roll it as often. It should be watered at night, cut in the morning, and rolled after cutting and before watering. The best way to repair a bare strip of ground is to lay fresh turf, and this should be done in the fall or as early as possible in the spring. Good tough turf, laid in February or early in March, will be fit for

use by the first of June. In the early spring grass roots both in new turf and old may be greatly benefited by a good dressing of manure well worked in, but regular manuring should also be done in the fall.

Worm casts are very bad for good tennis turf. Particularly in fertile ground or after a storm, the little mounds will appear on the sod, and if the roller passes over them or they are trodden down little hard lumps are formed which spoil the surface of the court. The turf should always be swept before rolling, and in rich soil every morning. This scatters the mounds effectually. Where it is necessary to get rid of the worms, lime water should be sprinkled on the ground. They will then come to the surface and can be swept away.

When a horse mowing machine is used it is well to have the horse's hoofs covered with soft pads to prevent their cutting into the turf and leaving prints that affect the bound of the ball. The groundsman at work on good lawn tennis courts, particularly when the turf is soft, and always on a sand court, should be required to wear rubber-soled shoes without heels.



INTER-STATE CHAMPIONSHIP MATCHES AT THE AVONDALE A. A., CINCINNATI.

New Thoughts on Training and Diet

BY EUSTACE H. MILES.

[From the London Daily Mail.]

Before I outline my system of training let me also say that I have put it to very severe tests. It has held good in the severest heat (in New York) and in the severest cold (in New York, Tuxedo, and Montreal). At Montreal I played three complete racquet matches (not games) in succession without a break. And in the United States I several times played three hard tennis matches in one day. Moreover, I can keep up this standard of endurance without regular practice of the games. At the beginning of last year I lived an almost utterly sedentary life for three months, and then went off and played tennis hard for two hours.

Nor have I ever found it necessary, because of the training, to discontinue my brainwork, even up to the very day of an important competition. Nor have I had a single breakdown, or indeed any appreciable staleness—the bugbear of athletes—since I changed my diet.

In diet I do not hold to the absolute ideal, but I never go very far from it. A “hygienic ideal” would cut me off from most social meals altogether, and also perhaps from all stuffy and smoky rooms. So I keep myself slightly on the human side of supreme pinkness. I prefer two meals a day, at 10—11 and 4—5, or (with perhaps a fruit breakfast) at 12—1 and 6:30—7:30. But I can eat five meals.

I do not eat either flesh foods (fish, flesh, or fowl), or meat juices (in soups or otherwise), or eggs. Why not eggs? Because they do not suit me. Why not flesh foods? For the same reason and for many others.

Instead of the undeniably nourishing and stimulating flesh foods I substitute what I find to be a not less nourishing basis and staple to give me proteid or albumen which shall rebuild

the blood and cells of my body and repair its waste. We might, indeed, live on proteid matter alone, and with it, with the help of a few minerals (e. g., phosphates), renew every cell of the body, says Professor Sir Michael Foster.

Professors Gamgee, Pavy, and Bunge, and Dr. Robert Hutchinson, like most other authorities, insist on the importance of proteid, and set down our average daily amount at 4 to 5 ounces. This amount I easily get from milk-proteid (I use Plasmon), cheese, nuts (often milled or in nut-foods), wholemeal bread, or biscuits, peas or haricot beans or lentils (sometimes); the other elements of food I obtain chiefly from fruits, but sometimes from well-prepared vegetables.

Stimulants such as tea I do not altogether avoid. I never have smoked for more than a few seconds; all attempts have always made me ill. I can eat slowly; for several days I gave my mouthfuls over sixty bites each.

But to two practices I must adhere—to the deep full upward breathing through the nose; and also to the daily air-and-light-bath for the whole body, together with rubbing, self-massage, sharp exercises, and stretching exercises. One of the greatest shocks of my life was when I was performing thus on the sands near Hunstanton and suddenly saw two undergraduates looking at me in fear and wonder from behind a rock. I now air-bathe in my bedroom. I can find no air-bath near London, queer London.

As to exercise, I never lift or carry weights except when I go shopping with ladies—this I do rarely. I consider that most weight-lifting tends to slowness and stiffness. My movements are chiefly brisk and full.

Equally important in my system is muscular relaxing; not mere stillness and not mere slackness, but freedom and economy.

Of course, in athletics we should relax most of the unused muscles. But I go further. I purposely relax my arms and hands, my legs and feet, my neck and spine. I relax my face, and smile (when I am alone). Why should I be tense and clench my fists and look almost as fierce as great American millionaires

and politicians do in their photographs? I cannot see a reason. So I try to look calm and not waste valuable energy in a worse than valueless way.

During brainwork I almost invariably aim at repose of the muscles—open channels through which, as through unknotted india-rubber pipes, the life-forces may smoothly flow. It is easiest to relax during the slow breathing outwards. It seems vital for me to relax both before and after great physical or mental efforts. That is a personal experience. Here, as with diet, I dare not suggest a law. I dare only suggest a plan worth trying. *Experientia docet*. Experience must be our teacher. By their fruits ye shall know them. If worry and anxiety be thus removed, have we not here the cheapest of all nerve sedatives?

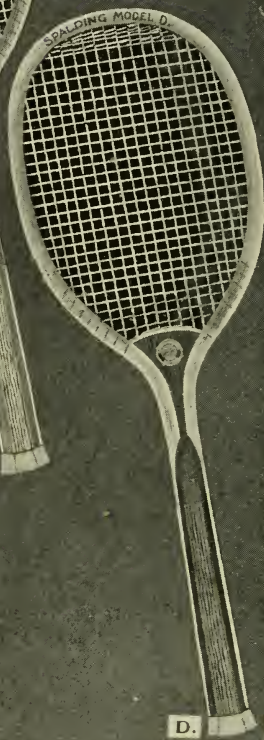
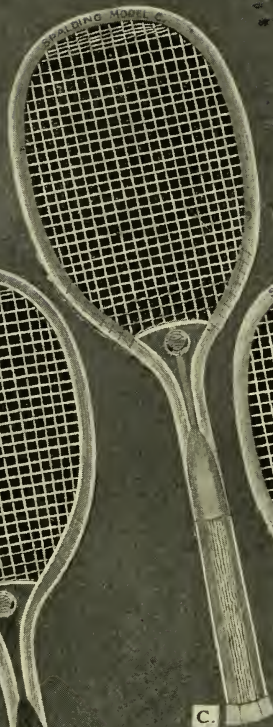
Water seems to me to have at least two distinctive functions. Warm water serves to soothe, and to cleanse. Let it be soft, whether it be rain-water or water distilled or else softened by oatmeal or some "salts," and let it be used with pure soap and friction. Cool or cold water serves to invigorate and harden. Cool or cold water should be used after warm water. The body may be sponged part by part, just as air-baths may be partial. And then should follow rubbing, and perhaps exercise, and certainly stretching of the limbs. How sadly we need it!

Sandals may be worn whenever one has the courage.

Though one of the greatest pleasures of my life was to have done over sixteen hours of hard brainwork in a day—once I reached eighteen—yet among the greatest pleasure I also reckon the consciousness of energy and endurance. I utterly disbelieve in the negative theory of health—that one should not be aware of the body. It ought to be a real joy to live. I love to feel each muscle tingle and thrill. I love to have to move briskly every now and then especially with the shoulders and the legs, from sheer vitality. Surely our healthy nerves should be to us a joy rivalling the joy from taste or music.

Let us sum up my way by contrasting it with orthodox training. When a man—say a rowing man at Cambridge—goes into training he gives up this and that, and he generally gives up much of his brainwork. I always am in training, and I give up nothing.

I only devote myself more than usual to my own tested principles. I practice my games, of course. But I also practice an increased and more jealous rightness of life. I do not alter my lines, I only keep them with more decided strictness. If my physical training did not make me fitter for every department and plane of life I should conclude that there was some mistake at the root of it. And, for the most part, mine are lines to which anyone can keep, and should keep if fair trial commend them.



What to Use for Lawn Tennis

To the majority of those who play lawn tennis, the racket is practically the only implement of play which has to be selected by them personally. This, then, is the article in which the greater number are interested and it shall therefore be considered first. Naturally the list of styles and qualities on the market is a long one, but the line which is recognized as standard, and in which will be found the greater number of approved models, is that made up by A. G. Spalding & Bros.

In tennis the social status of the players is more nearly equal than in such games as base ball, foot ball, etc., and the differences in prices between rackets which appear to the unpracticed eye as very much alike cannot be accounted for by a desire of the manufacturers to make up goods to suit pocketbooks of various sizes. The gradations of price in these goods occur more particularly on account of some detail of manufacture which makes the more costly, at the same time the more suited, to the expert player than the cheaper grades on which the same amount of labor cannot be expended, and consequently these latter do not possess the same nicety of balance and perfection of finish which is found in the better grades.

The selection of a racket is something that the player should attend to personally. Balance and weight must be considered well before making a purchase, and much care should be exercised in picking out a racket which feels good to handle, not heavy enough to appear clumsy, nor light enough to make a fast service an impossibility. For a man of ordinary strength 14 or 14½ ounces will generally suit—seldom heavier than this and very rarely below. The wrist is the determining factor. The handle generally preferred is the combed cedar or mahogany, which is just rough enough to give a good grip.

The Spalding Model Rackets are modeled after those used by the best players of recent years. With beveled frame, combed



mahogany handle and polished mahogany throatpiece, Models A and D cost \$7.00. They are well taped at bow, and in finish and quality of material they cannot be surpassed. Model C costs \$7.50 and is equipped with spliced cane handle extending through the walnut throatpiece, but otherwise is identical in quality with Models A and D. Corresponding with these, but with handles much larger to suit players who desire them so, Models AA, DD and CC complete the line of Spalding highest quality rackets, on which no expense has been spared to make them absolutely the finest in material and workmanship and the most perfect in model of any so far produced.

The Spalding Ocomo costs \$6.00, and is made up particularly for ladies' use. It is made of finest white ash with rounded edges, taped bow and mahogany throatpiece. At the same price the Spalding Tournament is sterling value and will give excellent satisfaction. The next mentioned in the order of price is the Spalding 'Varsity at \$5.00, although the 'Varsity Cork Handle at \$5.50 must not be forgotten; both are modeled on the Expert Spalding shape. Popular still, although the model is not approved by some of the newer players, the Spalding Slocum at \$4.00 each and the Slocum Junior at \$3.00 each, are welcomed by players who have clung to this game through its various vicissitudes as they do to this model, recognizing in both sterling qualities valuable both to a game and an implement of play.

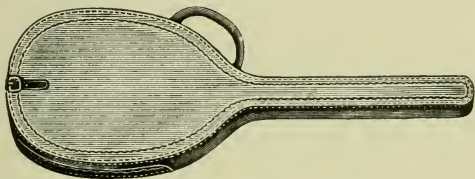
Beginners may want rackets cheaper in price than those mentioned above, but no matter what price is paid for it, value commensurate with price is found in all which bear the Spalding trade mark. The Vantage costs \$3.50, the Lakeside \$2.50, both well worth the price, but a dollar's difference between the two. The latter racket is also made in a special model with a handle somewhat larger than in the regular style. This is listed as No. 5X, and costs \$2.50. After these come the Greenwood at \$2.00, the Geneva at \$1.50 and the Favorite at \$1.00. The Practice is a racket for children and costs 75 cents.

Take good care of your racket if you want it to give satisfaction. Remember, it is strung with material that is very suscep-

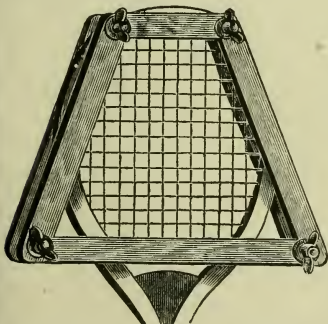


tible to dampness, and when it breaks do not always blame the manufacturer. Dry heat will warp the frame, too, so that extremes are to be avoided in the atmosphere of the room or closet where it is kept, and if play is continued in the evening until the dew is on the ground, or if court is near the sea, it is well to rub any moisture off the stringing with a cloth before putting the racket away in the case. If no case is in your possession, a press should be used to keep the frame in shape, this especially so at the seashore.

The best racket case is the Spalding No. 5; it is made of stiff leather, holds one racket and costs \$5.00. The same, but made for two rackets, is the Spalding No. 7, which costs \$7.50. A very



good mackintosh cover, thoroughly waterproof and substantially made, costs \$1.00. This is the Spalding No. 4. One made of canvas, leather bound, listed as Spalding's No. 2, costs 75 cents, while their No. 1, made of soft felt in a variety of colors, costs 50 cents.



By far the most practical form of press and one which will effectually prevent the frame warping is the shape made by Spalding and listed as No. 1R. It costs \$1.00 each, and the same style, No. 2R, made to hold two rackets cost \$2.00.

Some players like a rubber covering for the racket handle to secure a better grip. These are made in two styles. With



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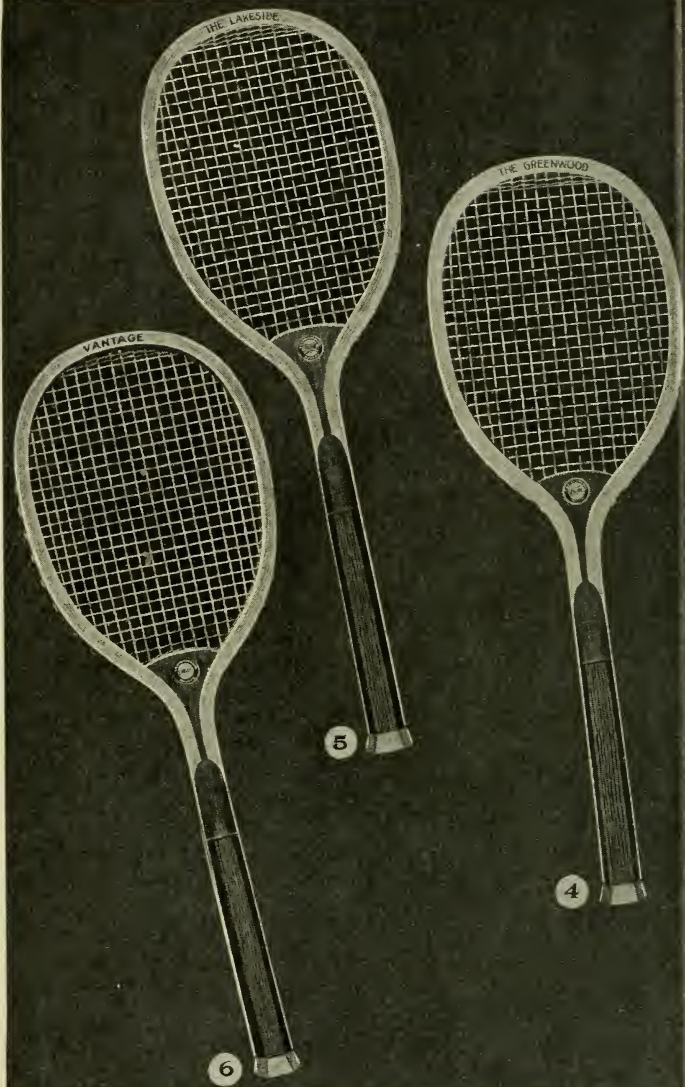
circular corrugations, the Spalding No. 1 costs 25 cents, while the No. 2, with pin-head corrugations, costs 35 cents. Both are made of an excellent quality of rubber and are red in color.

After the racket has been in use for a season or so, a necessity will very likely exist for restringing. This should be done in the proper manner, and it really pays in the end to have some reliable firm do the work for you. Spalding uses three different qualities of gut for restringing and the prices are: for Best English, \$2.75; Best American, \$1.75; Good American, \$1.25 each. Remember, the frame of a racket can be pulled out of shape very easily by an inexperienced person in stringing, and the same rendered absolutely valueless thereby. Spalding employs experts, and if possible the racket frame is improved in shape after going through their hands rather than otherwise.



When you purchase tennis balls, you do so perhaps after having played with those a friend purchased. His judgment may guide you in selecting the brand, but at any rate don't rob the game of half its good points by purchasing something that looks like what he used, but the similarity of which does not go below the felt cover. The best grade ball, and one that is guar-

anteed absolutely perfection, is the Spalding Championship No. 2/o, which costs \$4.00 per dozen. The adopted ball is made by Wright & Ditson and costs \$5.00 per dozen. A ball of uniform quality, carefully constructed and warranted to give satisfaction, is the Spalding Tournament No. o, which costs \$3.50 per dozen. A cheaper grade of felt-covered ball is the Spalding Vantage at \$3.00 per dozen. This latter will do for practice.

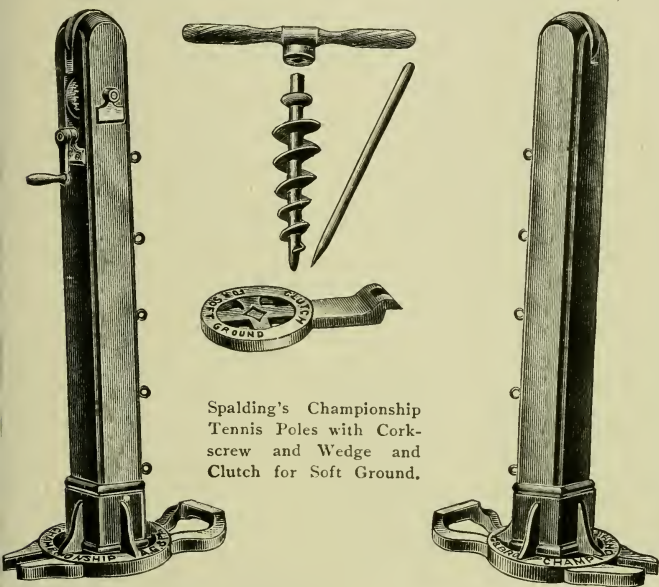


Although every one who wishes to play the game may not have a place to play, it is generally possible to find a plot of ground which can be arranged suitably, and the expense of improving same and keeping it in good order borne by a small circle among those of your friends who wish to play. If this cannot be done, the would-be player can generally obtain admittance to some already organized club, while in some of the larger cities grounds are let out by the hour, so that the problem of where to play need not bother the aspirant for honors on the tennis court if he makes an effort at all to obtain the information. Presuming that you have found a suitable plot of ground, have it worked up to the point where it can be used for a tennis court. The next matter to consider will be the equipment that will be necessary to fit it up for playing. „

The poles must be purchased first. They are made in a number of styles and the prices range from one to twenty dollars per pair. If you want the best, most decidedly get the Spalding Championship No. A, which cost \$20.00 and are worth every penny of the price. They are square poles of $3\frac{3}{8}$ inch ash, finely polished, with heavy japanned iron bases and ratchet crank of special design, with which the net can be drawn taut when it lags in the middle. An iron corkscrew holds the pole itself firmly in place, being fixed permanently in the ground marking the place where the poles should be set. To steady them in case the ground is soft, iron clutches are included in the equipment furnished with them. The Spalding Tournament poles No. B cost \$10.00 per pair. The pole itself is made of square $2\frac{3}{4}$ -inch ash, finely finished, and the base of heavy japanned iron, a ratchet crank for tightening net being also placed on this pole. Iron pins for fastening the bases to the ground are packed with the poles. A style that is absolutely first class and one which has steadily increased in popularity during the years it has been on the market, is the one that Spalding lists as the Casino No. C, and which costs \$6.00 per pair. They are round poles, have heavy japanned iron bases and pins for fastening to the ground, together with ratchet crank for tightening net. If poles are required which are

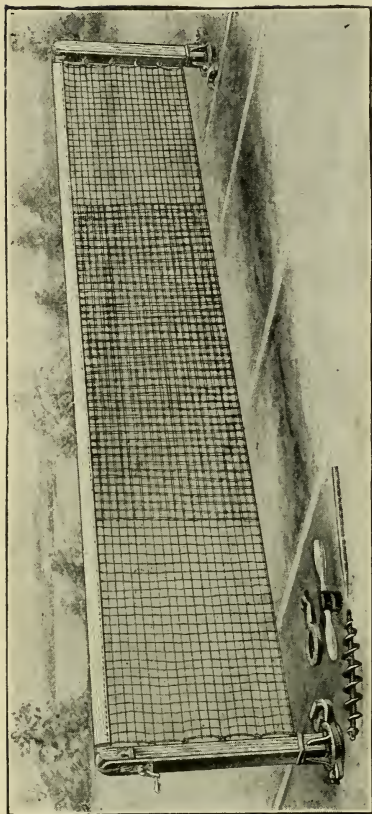


to be left up permanently, by far the best style is the Spalding No. D, which costs \$3.00 per pair. They have an iron bracket brace on the side to keep them firm and are nicely painted, making a very handsome appearance. These are inserted eighteen inches into the ground and need no guy ropes or pegs. The Spalding No. E poles cost \$2.00 per pair. They are finely polished, solid and spiked, and are packed complete with guy ropes and pegs. For \$1.00 per pair you can obtain a fair quality pole—the Spalding No. F—also complete with guy ropes and pegs.

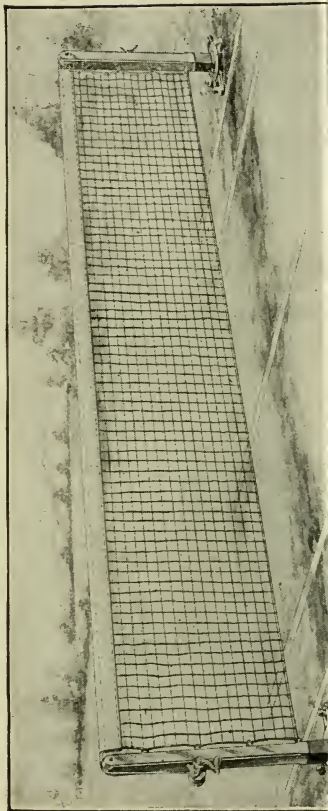


Spalding's Championship
Tennis Poles with Cork-
screw and Wedge and
Clutch for Soft Ground.

Now as to the net. This will have to be selected according to whether you have a double or single court to fit out. Although the Spalding No. 1 measures 27 feet and costs 75 cents, still even for a single court it will be well to pick out a net measuring 36 feet. The cheaper grades are machine made and the No. 2

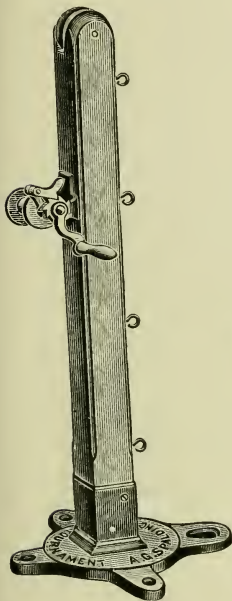


Spalding's
Patent
Double
Centre
Nets.

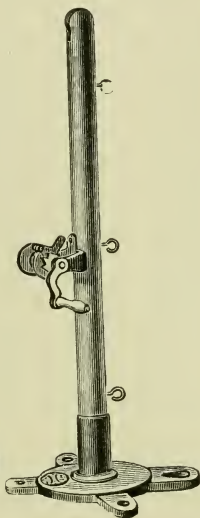


Spalding's

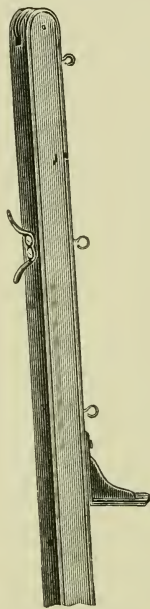
costs \$1.00. A double court net 42 feet long, of same grade as these other two, costs \$1.50. It is a question whether in the long run it is not better to get a good quality hand made net. It is also important to have it bound with a wide strip of white canvas at the top. This will help the players by enabling them to see the top of the net at a glance. Spalding's No. 2B, which



Tournament Pole.

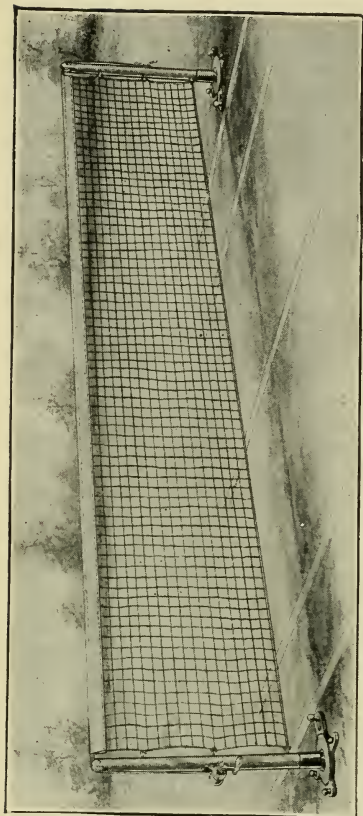


Casino Pole.

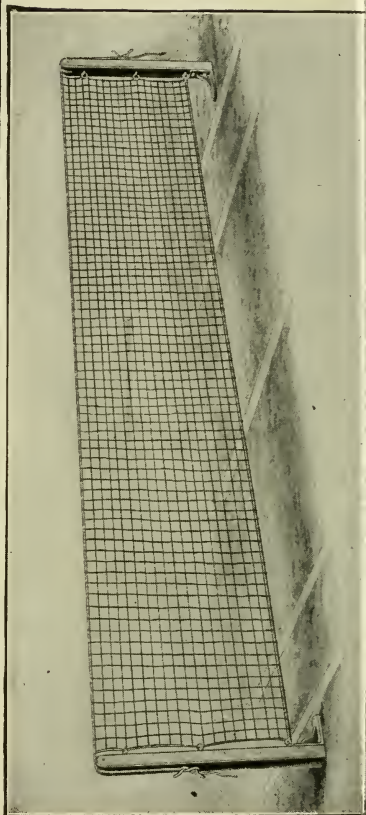


Square Pole.

measures 36 feet and is made of 21 thread white twine and canvas bound, hand-made throughout, costs \$3.00. The same grade, but 42 feet long—No. 3B—costs \$3.50. Corresponding to these in machine made nets of 15 thread twine, the 36 foot style, No. 2A, costs \$2.00, and the 42 foot, No. 3A, \$2.25. The Spalding Intercollegiate nets have given excellent satisfaction and are very



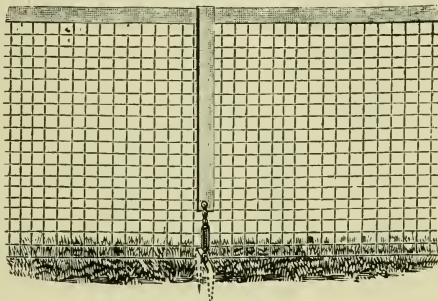
Spalding's
Canvas
Bound
Nets.



Spalding's
Regulation
Tennis
Nets.

popular. They are hand knit of 21 thread twine, and have extra wide white canvas strip at top. This style and quality is used at Newport and if desired tanned nets will be furnished at same price. No. 2E, Intercollegiate, 36 feet, 21 thread, costs \$3.75, and the same, but measuring 42 feet, No. 3E, costs \$4.25. A net with double centre should be used on a court where there are men who hit the ball hard and fast. This is a patented feature of the Spalding nets. The No. 2C is 36 feet long, with 11 feet of 15 thread twine double knitted in the centre, and costs \$4.50 each. No. 2D is the same, but of 21-thread twine, and costs \$5.00 each. No. 3C costs \$5.00, is 42 feet long and has 13 feet of 15 thread twine double knitted in the centre. The same, but of 21 thread twine, is listed as Spalding's No. 3D and costs \$5.50.

Where it is not convenient to take the net in every night it would be well to have a tarred net. No 2X is canvas bound, 36 feet long, and is made of 21 thread twine. It will withstand the elements and give good satisfaction for a long time. It costs

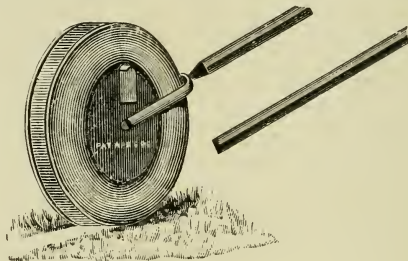


Canvas Centre Strap.

\$4.00. The same, but 42 feet long, No. 3X, costs \$4.50. To keep the centre of the net at the required height a strap or fork should be used, preferably the former, as there is then no danger of the ball glancing off and striking out of court, as is occasionally the case with an iron centre fork. No. 3/o Centre Strap costs \$1.50 each, is Tournament Pattern and has a turnbuckle with which height of net can be adjusted to a hair. No 2/o is a sim-

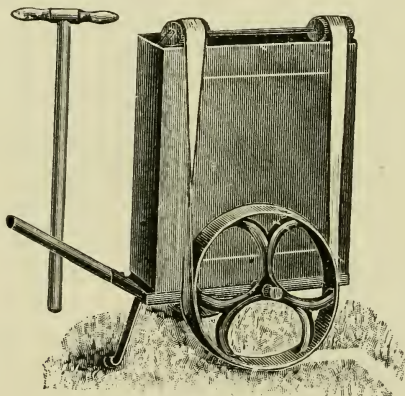
ilar style and costs \$1.00 each, but has not the turnbuckle attachment. Iron centre forks are made in two styles: No. 1, regulation, patent stirrups, costs \$1.00, and No. 2, an ordinary iron fork, costs 60 cents.

For the same reason that it is advisable to move the posts from time to time on a grass court in order to save the turf, it will



No. 2 Dry Tennis Marker.

also be necessary to have some arrangements for marking the lines afresh as they are rubbed or washed away. The Spalding dry marker No. 2 costs \$2.00, and can be used on a dirt court



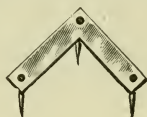
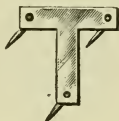
Columbia Tennis Marker.

with marble dust, slaked lime, etc. The Columbia tennis marker costs \$5.00 and is suitable particularly for marking grass courts. It has a tank to hold the marking solution and the tape runs over the wheel and through the solution giving a clean even ribbon line with contact in full view. , ,

It is well to have a set of marking plates for permanently marking the angles of court. They are sunk to the level of the court and must not under any circumstances protrude above. Spalding makes two styles: No. 1, with separate pins, costs \$1.00 per set; No. 2, with wedge pins attached, \$1.50 per set. Marking tapes will be found very useful and particularly convenient where one has to mark out the court himself. Spalding's No. 3 costs \$3.50 per set, are for single court, and come complete with 100



No. 1.



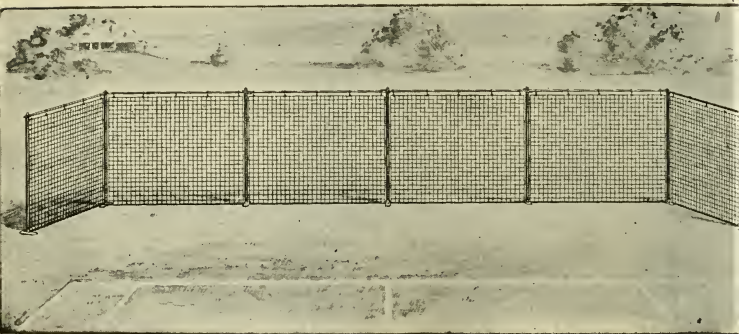
No. 2.

staples and pins. For double court three styles are made: No. 4 costs \$4.00 per set, complete with 200 staples and 14 pins; No. 6 are also for double court, but are made of extra quality canvas and cost \$6.00 per set complete. Waterproof tapes are made in one style, Spalding's No. 7, for double court. They cost \$8.00 per set complete. In each set the tapes are cut in proper lengths for each line of the court, and the staples and pins furnished are sufficient to secure it by using them at frequent intervals.

Backstop nets will be required and for them also poles of suitable height. Spalding's BS poles cost \$1.00 each. No. 4 net measuring 50 feet long by 7 feet high and made of 9-thread twine, costs \$2.50. No. 5 net, 50 feet long by 8 feet high and 12-thread twine costs \$3.00. Both of these are white. A tarred backstop net is listed as No. 5X and costs \$3.50. It is 50 feet long, 8 feet high and made of 12-thread twine.

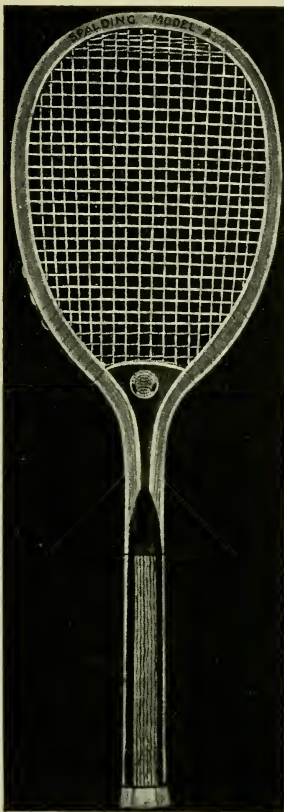
By long odds, however, the finest arrangement for a portable backstop that has so far been placed on the market is the Spalding

sectional style of tubular iron uprights and cross rods with galvanized iron wire netting. Each section measures 9 feet long by 7 feet high, and is hung separately so as to permit players to pass back and forth. Six sections all complete, measuring 54



Spalding's Backstop Nets.

feet long by 7 feet high, cost \$25.00 and additional sections can be had at proportionate price. For fitting up a court complete, perhaps more than one set may be required, but they are well worth the price that is asked for them and will add considerably to the general appearance of the court.



SPALDING'S MODEL RACKETS

Model A

Beveled frame, combed mahogany handle, polished mahogany throat piece.

No. 14. Each, \$7.00

Model AA

Extra large combed mahogany handle, polished mahogany throat piece, beveled frame.

No. 14X. Each, \$7.00

Model C

Spliced cane handle, combed, extending through walnut throat piece, beveled frame.

No. 13. Each, \$7.50

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SPALDING'S TENNIS RACKETS

Model CC

Extra large spliced cane handle, combed, extending through walnut throat piece, beveled frame.

No. 13X. Each, \$7.50

Model D

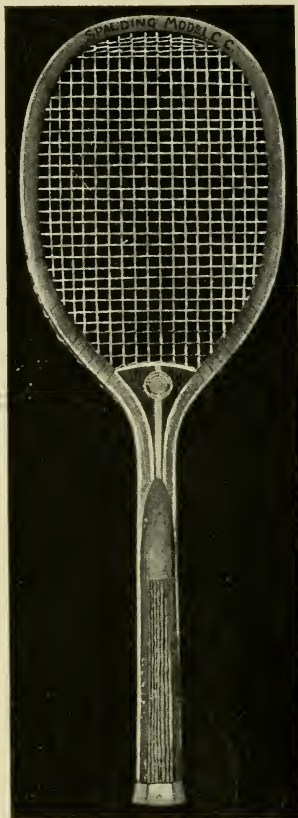
Beveled frame, combed mahogany handle, polished mahogany throat piece.

No. 15. Each, \$7.00

Model DD

Extra large combed mahogany handle, polished mahogany throat piece, beveled frame.

No. 15X. Each, \$7.00



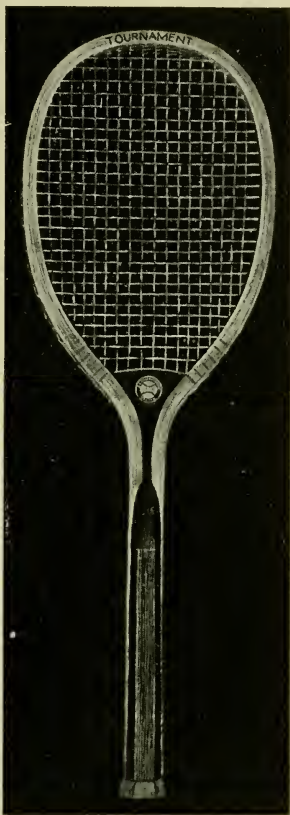
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SPALDING'S TENNIS RACKETS

The Tournament

Modeled after design of prominent player. Finest white ash frame with mahogany throat piece and taped bow. Best white gut stringing, combed mahogany handle, leather capped. Finished with high polish.

No. 11. Each, \$6.00

The Varsity

A well made racket at a popular price. New model. Finely finished white ash frame and mahogany throat piece. Strung with fine white gut. Combed mahogany handle, leather capped.

No. 10. Each, \$5.00

The Varsity—Cork

Same as No. 10, but equipped with cork handle instead of combed mahogany handle.

No. 10C. Each, \$5.50

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SPALDING'S TENNIS RACKETS

The Slocum

Old model as popular as ever. Frame of selected white ash, highly polished, fine quality main strings and red cross strings, mahogany throat piece, combed mahogany handle, leather capped.

No. 9. Each, \$4.00

Slocum Junior

Old model and very popular. Frame of highly polished white ash with polished walnut throat piece combed mahogany handle, leather capped. Strung with all white fine quality gut.

No. 8. Each, \$3.00

The Ocomo

For ladies' use particularly. Frame of finest white ash with rounded edges. Taped bow and mahogany throat piece. Stringing of very best white gut. Combed mahogany handle, made small for ladies' use, leather capped. Fine polish finish.

No. 12. Each, \$6.00



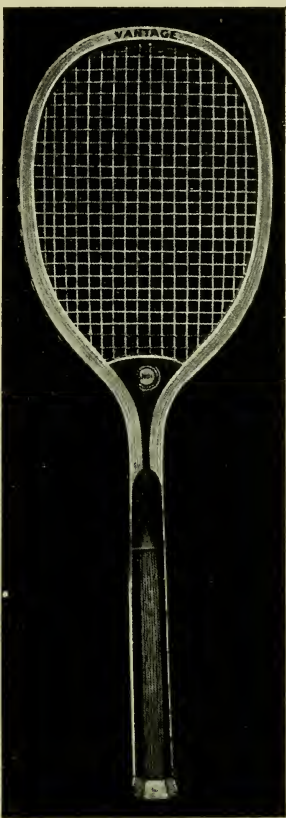
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SPALDING'S TENNIS RACKETS

The Vantage

Improved model, frame of highly polished white ash, mahogany throat piece, fine quality white gut stringing, combed mahogany handle, leather capped.

No. 6. Each, \$3.50

The Favorite

Approved model, frame of white ash, polished walnut throat piece, stringing of good quality gut, combed cedar handle, leather capped.

No. 2. Each, \$1.00

The Greenwood

Improved shape, frame of finely finished good white ash, polished mahogany throat piece, stringing of good quality gut, combed mahogany handle, leather capped.

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SPALDING'S TENNIS RACKETS

The Lakeside

An excellent racket, frame of finely finished white ash, polished mahogany throat piece, stringing of fine quality white gut, combed mahogany handle, leather capped.

No. 5. Each, \$2.50

Same as No. 5, but with larger handle.

No. 5X. Each, \$2.50

The Geneva

New shape of popular design, frame of white ash, finely finished, polished walnut throat piece, good quality gut, combed cedar handle, leather capped.

No. 3. Each, \$1.50

The Practice

A good practice racket, frame of white ash with walnut throat piece and combed cedar handle, leather capped; stringing of good quality gut.

No. 1. Each, 75c.



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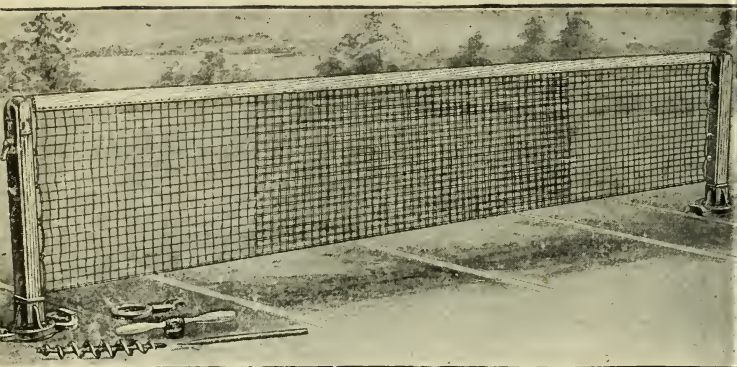
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Spalding's Patent Double Centre Nets

Pat. Dec. 4, 1888. Pat. April 9, 1889

Spalding's Patent Double Centre Nets are hand knitted, and in the centre, where most of the wear comes, have double twine knitted together for 11 to 13 feet, according to size of net. Will outlast two or more ordinary nets.

No. 2C.	Length 36 feet; double centre, 11 feet; white, 15 thread, double court.	Each, \$4.50
No. 3C.	Length 42 feet; double centre, 13 feet; white, 15 thread, double court.	Each, \$5.00
No. 2D.	Length 36 feet; double centre, 11 feet; white, 21 thread, double court.	Each, \$5.00
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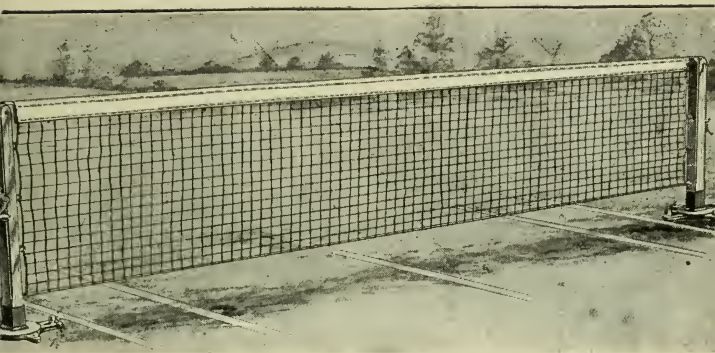
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Spalding's Intercollegiate Nets

Hand knit of best quality twine. Extra wide canvas strip at top. Same style and quality as used at Newport and all championship events. Tanned nets if desired.

No 3E. Double Court, 42 feet, 21 thread;	
hand made.	Each, \$4.25
No. 2E. Double Court, 36 feet, 21 thread;	
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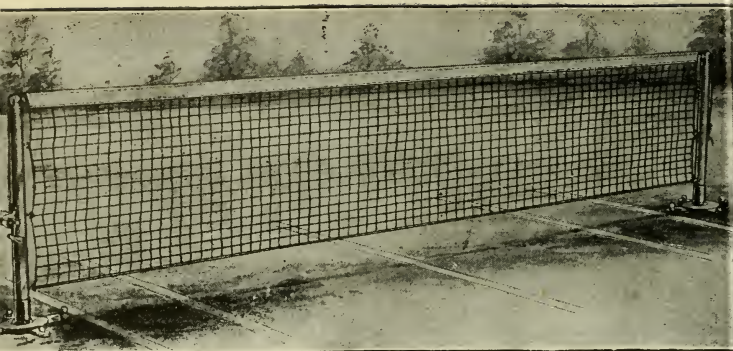
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Spalding's Canvas Bound Nets

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| No. 2A. Double Court, machine made, 36 feet, 15 thread; white. | Each, \$2.00 |
| No. 3A. Double Court, machine made, 42 feet, 15 thread; white. | Each, \$2.25 |

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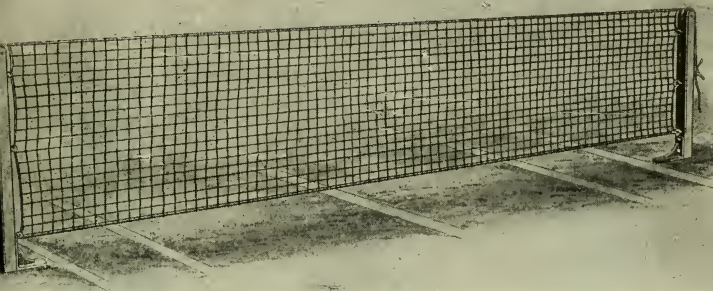
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Spalding's Regulation Tennis Nets

No. 3. Double Court, machine made, 42 feet, 15 thread;
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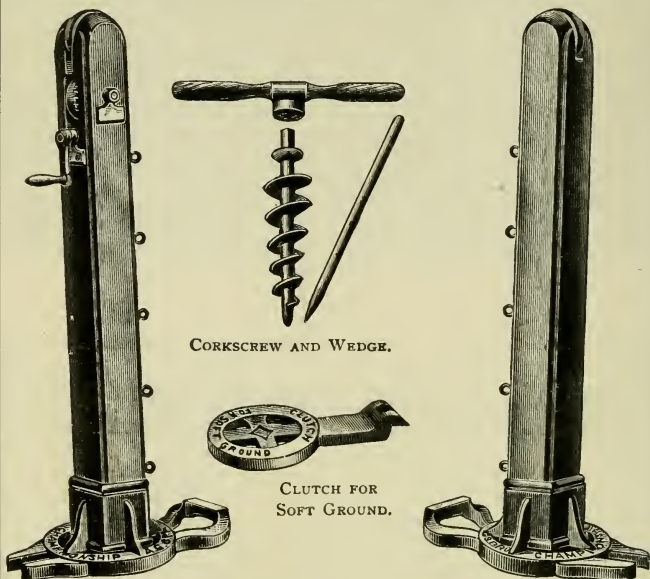
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Spalding's Championship Tennis Poles



CORKSCREW AND WEDGE.

CLUTCH FOR
SOFT GROUND.

Without doubt the finest thing in the way of a Tennis Pole that has ever been placed on the market. Square, $3\frac{3}{8}$ -inch ash poles, finely finished, with heavy japanned iron bases, and ratchet crank of special design. We also supply with these poles iron clutches to steady the poles when used on soft ground, and our special iron corkscrews, which are fixed permanently in the ground, marking the place where poles should be set. Handle and wedge spike used to insert corkscrew packed with poles.

No. **A.** Championship Tennis Poles Pair, **\$20.00**

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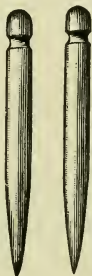
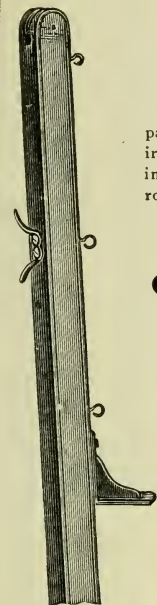
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Spalding's Tennis Poles

Square poles, $2\frac{3}{4}$ inch wood, handsomely painted in red with black striping; japanned iron bracket bases to steady poles, which are inserted 18 inches into the ground. No guy ropes necessary with these poles.

No. **D** Per pair, **\$3.00**

Guy Ropes and Pegs for Tennis Nets



- | | | | |
|--------|--------------------------|-----------|----------------------|
| No. 1. | Hemp ropes, plain pegs | | Per set, 25c. |
| No. 2. | Cotton ropes, plain pegs | | " 50c. |
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No. 3 will answer for backstop nets.

Complete Catalogue of Athletic Sports Mailed Free.

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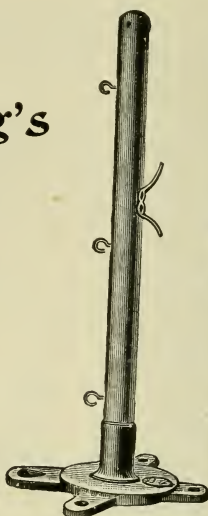
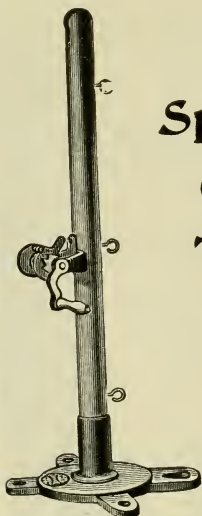
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Spalding's Casino Tennis Poles



Round poles of ash, finely polished; japanned iron bases and pins for fastening firmly to ground. No guy ropes required with these poles. Net is adjusted by ratchet crank.

No. **C.** Casino Poles. Per pair, **\$6.00**

Spalding's Tennis Poles

Finely polished, solid, spiked tennis poles. Packed complete with guy ropes and pegs.

No. **E.** Per pair, **\$2.00**

Good quality solid tennis poles. Packed complete with guy ropes and pegs.

No. **F.** Per pair, **\$1.00**

No. E

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No. F

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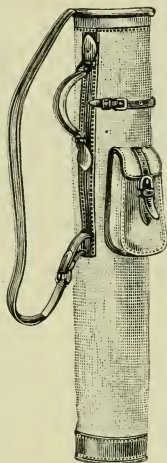
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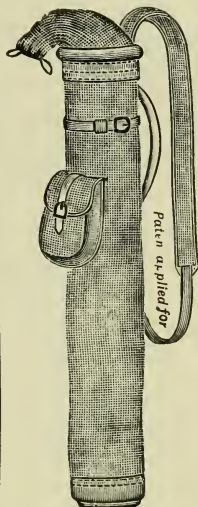
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Spalding's Canvas Caddy Bags



No. CXL



No. CXH

- No. C2. Heavy bound canvas; leather trimmings, wooden bottom; ball pocket and sling to match. Each, \$1.00
- No. CX. Extra heavy light tan colored canvas bag, leather bottom; extra large ball pocket and sling to match. Each, \$3 00
- No. CXL. Same style as No. CX, excepting that it is made larger throughout; studs on bottom. Each, \$2.50
- No. CXH. Furnished with canvas emergency hood, which can be quickly drawn over clubs in case of rain, and is inside of the bag and out of the way at other times. Quality and style otherwise same No. CX. Each, \$3.00
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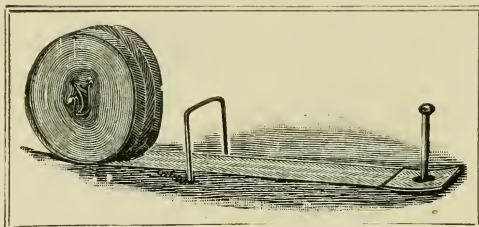
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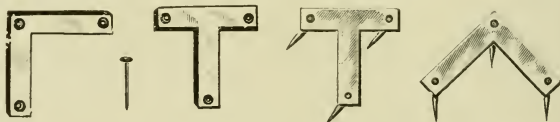


Portable Marking Tapes

- No. 3. For Single Court, complete with 100 staples and pins. Per set, \$3.50
- No. 4. For Double Court, complete with 200 staples and 14 pins. Per set, \$4.00
- No. 6. For Double Court, extra quality canvas, complete with 200 staples and 14 pins. Per set, \$6.00
- No. 7. Waterproof Tape, for Double Court, complete with 200 staples and 14 pins. Per set, \$8.00
- No. S. Extra Staples. Per 100, .50

—Marking Plates—

For permanently marking angles of court. Made of malleable iron and painted white. A set consists of eight corner and two T pieces.



- No. 1. Marking Plates, with separate pins. Per set, \$1.00
- No. 2. Marking Plates, with wedge pins attached. Per set, \$1.50

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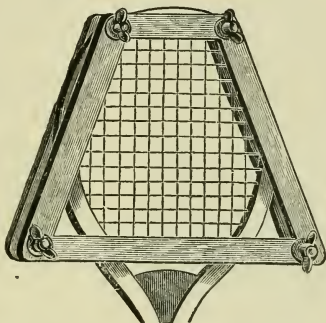
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Racket Presses



The new shape in which we are making our presses we believe will be found very satisfactory and thoroughly effective. Rackets should be kept in one of them when not in use to prevent warping, especially when they have been exposed to moisture or used at the seashore.

No. 1R.	For one racket.	.	.	Each, \$1.00
No. 2R.	For two rackets.	.	.	" 2.00

Rubber Handle Covers

For covering racket handles to secure better grip. Made of pure gum rubber.



No. 1.

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No. 2.	Pin head corrugations.	.	.	" 35c.

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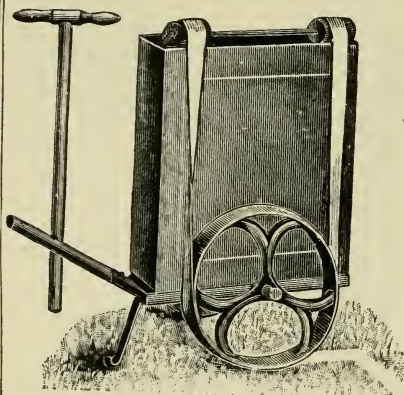
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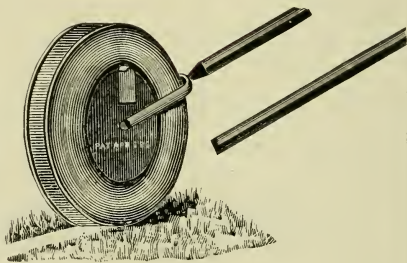
Columbia Tennis Marker

Makes a clean, even
ribbon line, with
contact in full view.

No. 1.
Each, \$5.00

Dry Tennis Marker

No mixing of ma-
terial. Uses marble
dust and slacked
lime, etc.



No. 2. Each, \$2.00

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handsomest sporting goods catalogue ever issued.

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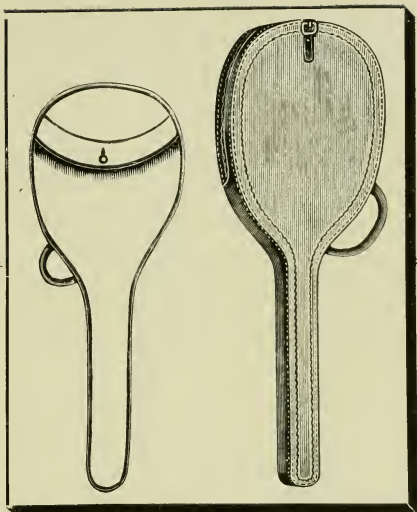
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No. 4. Mackintosh Cover, thoroughly water-proof. Each, \$1.00

No. 5. Stiff Leather, for one racket. 5.00

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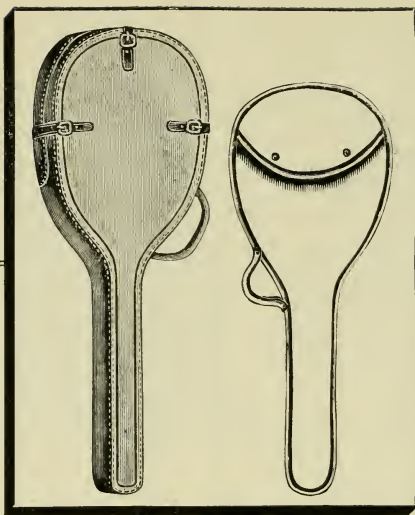
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Spalding's Racket Covers

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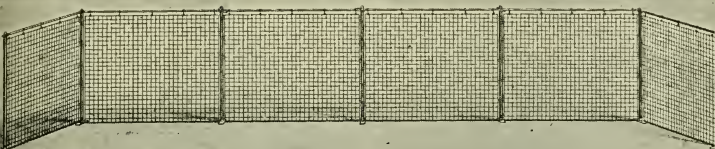
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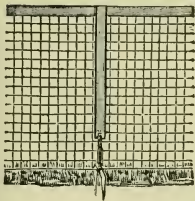
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Cut illustrates six sections, measuring 54 feet long by 7 feet high, set up. Uprights and top rods are tubular iron, heavily japanned. Netting is of galvanized iron wire, which is unaffected by the weather and will not rust, and each section is hung separately to permit players to pass back and forth.

Spalding's Backstop Nets, as illustrated above. . . . Complete, \$25.00
Additional sections at proportionate price.

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No. 4.	White, 50 ft. long, 7 ft. high, 9 thread.	Each, \$2.50
No. 5.	White, 50 ft. long, 8 ft. high, 12 thread.	" 3.00
No. 5X.	Tarred, 50 ft. long, 8 ft. high, 12 thread.	" 3.50
No. BS.	Backstop Net Poles only.	" 1.00



Canvas Centre Strap

This is a new device for holding centre of net at regulation height, three feet, and is vastly superior to the ordinary centre iron. It serves the purpose intended perfectly, does not chafe the net, and cannot possibly cause the ball to glance off and strike out of court, as is occasionally the case with an iron centre fork.

No. 2-0. Canvas Centre Strap. Each, \$1.00

Tournament Pattern

Same as above, only fitted with a turn-buckle, with which height of net can be adjusted to a hair. Very desirable for tournament or match games.

No. 3-0. Tournament Pattern. Each, \$1.50

Iron Centre Forks

No. 1. Regulation, patent stirrups, \$1.00 | No. 2. Cheap Iron Fork, 60c.

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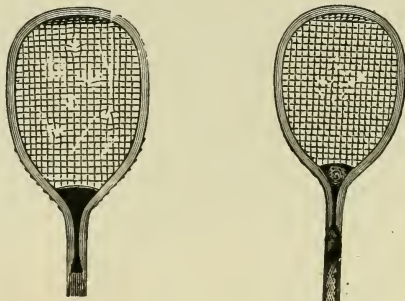
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Rackets Restrung



We make a specialty of this branch of our business, and are constantly in receipt of rackets to be restrung, of every known make, from all parts of the United States and Canada. This work is done by our most scientific stringers, and none but first quality gut is used.

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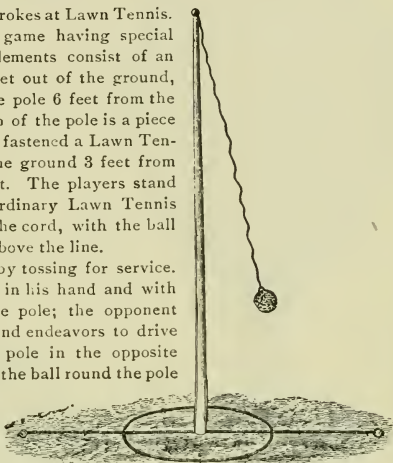
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Tether Tennis Game

This game was originally introduced for the purpose of practising various strokes at Lawn Tennis. It has now developed into a game having special merits of its own. The implements consist of an upright pole standing 9 or 10 feet out of the ground, having a line marked round the pole 6 feet from the ground. Attached to the top of the pole is a piece of cord, at the end of which is fastened a Lawn Tennis ball. A line is drawn on the ground 3 feet from the pole on opposite sides of it. The players stand outside this line, using an ordinary Lawn Tennis racket. The game is to wind the cord, with the ball attached, round the pole and above the line.

The game is usually started by tossing for service. The winner then takes the ball in his hand and with the racket drives it round the pole; the opponent stops the progress of the ball and endeavors to drive it back again and round the pole in the opposite direction. The player getting the ball round the pole and above the line, wins the game. A set is usually the best of eleven games. The service may either be taken alternately or continuously until the server loses a game.



**Tether Tennis Ball and Pole ready for play.
Cut shows Marking Ropes in Position.**

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No. 3.	Tether Pole, 12 feet.	. . .	1.00
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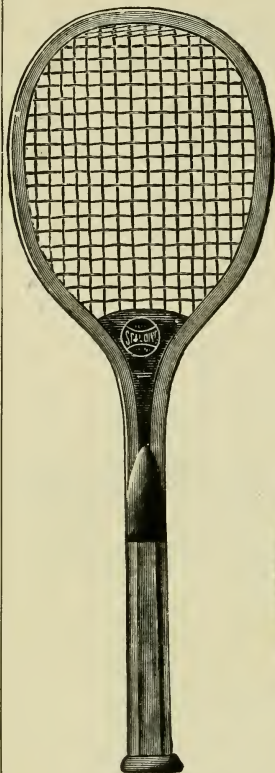
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Spalding's Squash Racquets

Squash Racquet Bat.

Made of finest selected ash ; strung with best quality gut ; grip wound with white kid ; hand made throughout.

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Squash Racquet Balls.

Best quality 1 11-16 inch rubber balls ; black or red enamelled.

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Model D
DRIVER or BRASSIE



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Model F
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Model B
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Model A
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Model C
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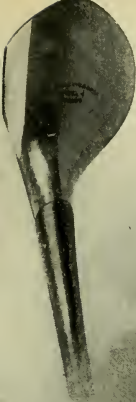
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The Spalding Wood Clubs are manufactured from the finest dogwood and persimmon, and are all guaranteed. The models are duplicates of those used by some of the best golfers in the world; the grips are horsehide and the finish is the very best; the shafts are all second growth split hickory, and particular attention is given to the spring and balance of the club.

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MODEL L
DRIVER OR BRASSIE



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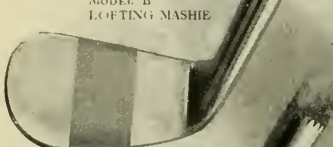
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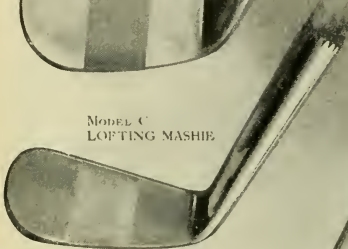
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MODEL B
LOFTING MASHIE



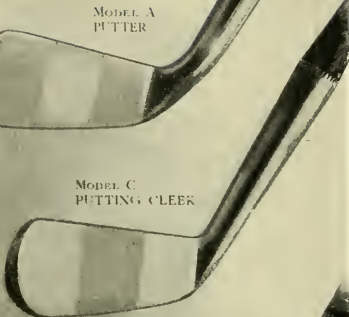
MODEL C
LOFTING MASHIE



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NIBLIC



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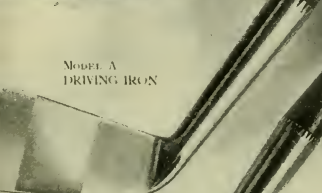
MODEL A
MID IRON



MODEL B
CLEEK



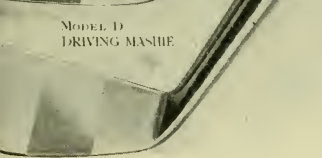
MODEL B
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THE SPALDING "H. VARDON" GOLF CLUB.

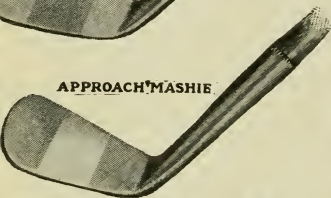
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MASHIE IRON



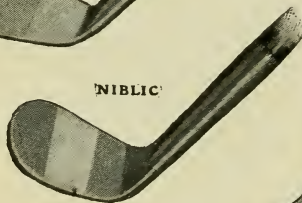
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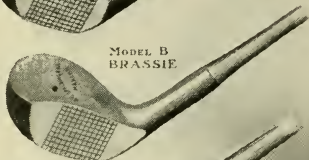
MODEL D
DRIVER



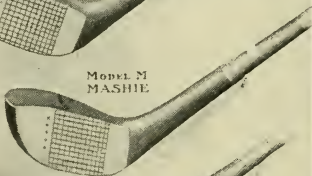
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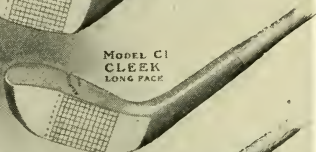
MODEL MID
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Each \$3.00



We never introduce an article regularly by placing it in our catalogue until we are certain it possesses qualities which will assure it of permanent favor. We adopt no freaks, and desire that Spalding clubs shall be recognized as standard wherever the game is played. Aluminum clubs, to our mind, represent no passing fad. Their merits and points of superiority have been attested by many of the most prominent players in this country, and the general run of players are gradually coming to understand the value of a non-rustable club, and one which will improve their general play without a doubt. We contend that every player desires to make a good showing at all times, and aluminum clubs will certainly increase his chances in that direction

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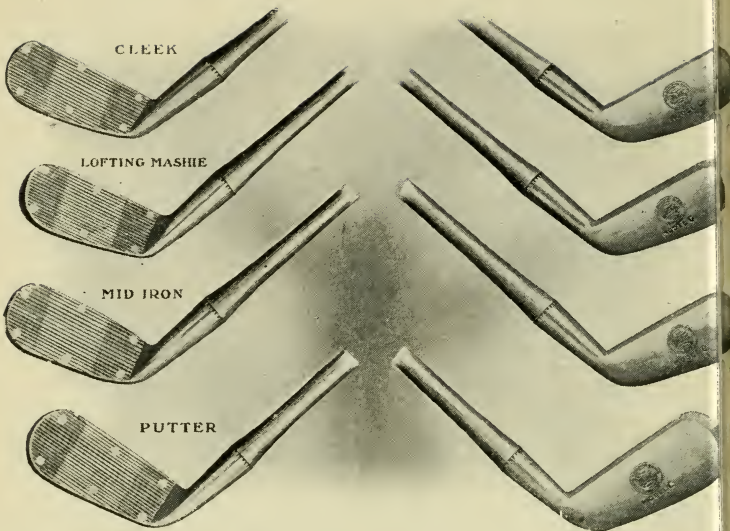
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The Spalding Hollow Steel Faced Golf Clubs

Patented June 8, 1897

Each, \$2.50

This style club is something that should be in the caddy bag of every golfer really interested in playing the best game possible. In construction it is scientifically correct, and the idea is one that needs only to be explained in order to meet with general approval. We rivet a piece of one-sixteenth inch highly tempered steel on a hollow head, and in that way give you spring and resistance combined at the point where they are required. Golfers of international reputation have endorsed them highly and they bid fair to revolutionize club making to a great extent. The set consists of cleek, lofting mashie, mid-iron and putter. Each has points of superiority over the ordinary style, and we claim we may make in regard to them we are sure will be borne out by your experience after a trial. We know that the cleek, tried fairly, should improve your shots at least fifty yards, and we can make this statement safely because the assertion has been repeated to us so often by those who are using the club now.

Furnished with Horsehide Grips; finest quality throughout.

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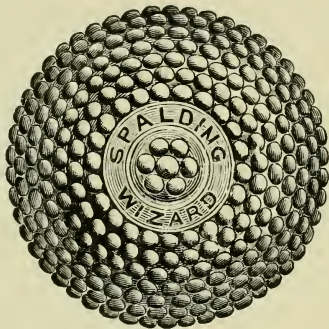
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Rubber Cored



It is not an experiment,
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success

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That is, the best it is
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The covers of the Wizard Ball are manufactured from gutta percha and other resilient materials from a recipe known only to ourselves. We guarantee them not to crack, open or break during eighteen-holes-play. If they do, send them back and we will replace them.

THE CORE IS WOUND TO A
HIGHER TENSION

than is possible on any machines other than the ones we use, and the highest tension must produce the best ball.

Doz. \$6.00

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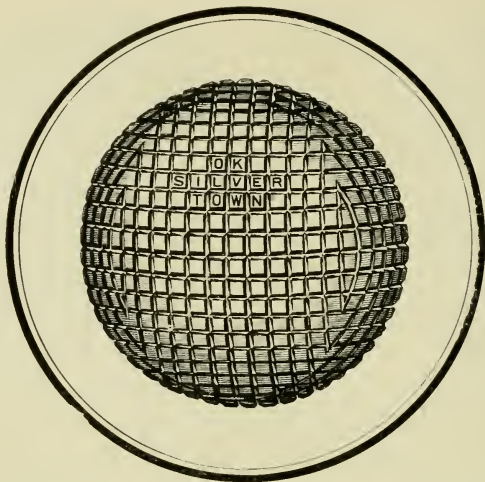
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**Size 27 1-2. Selected quality
Thoroughly seasoned**

No. O. K. - - - - PER DOZEN, \$3.50

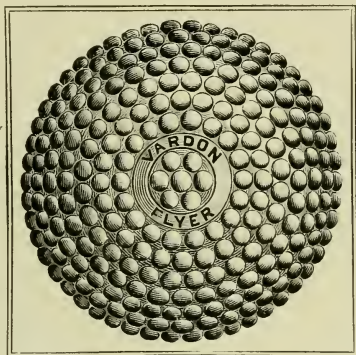
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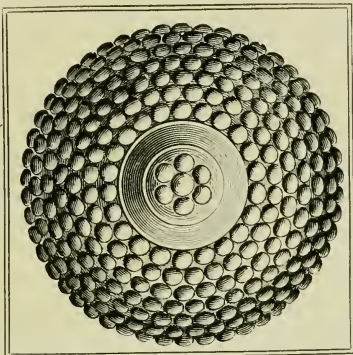
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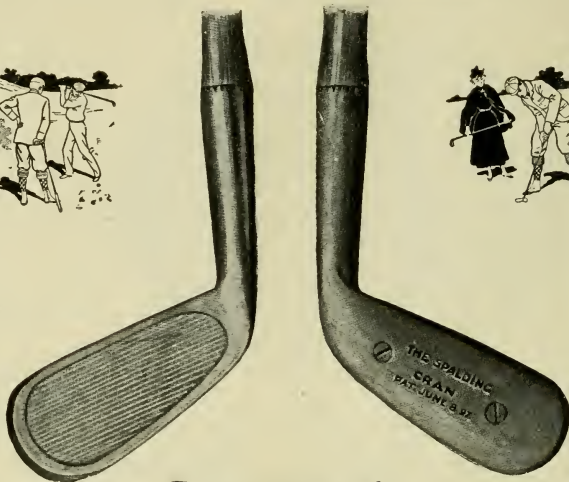
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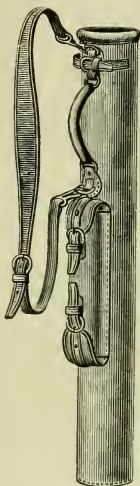
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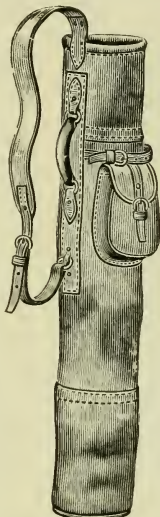
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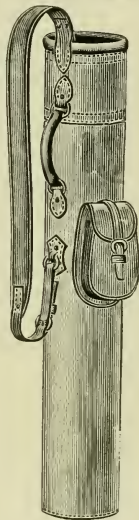
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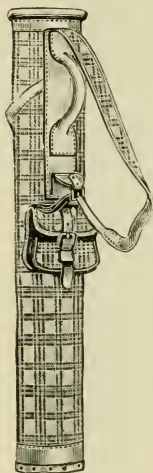
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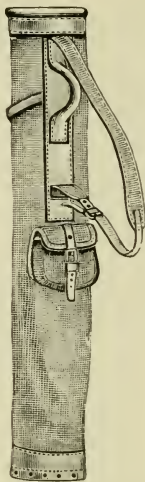
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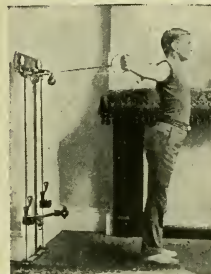
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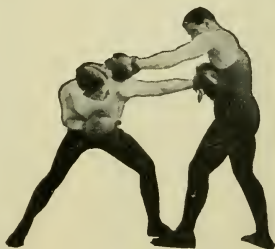
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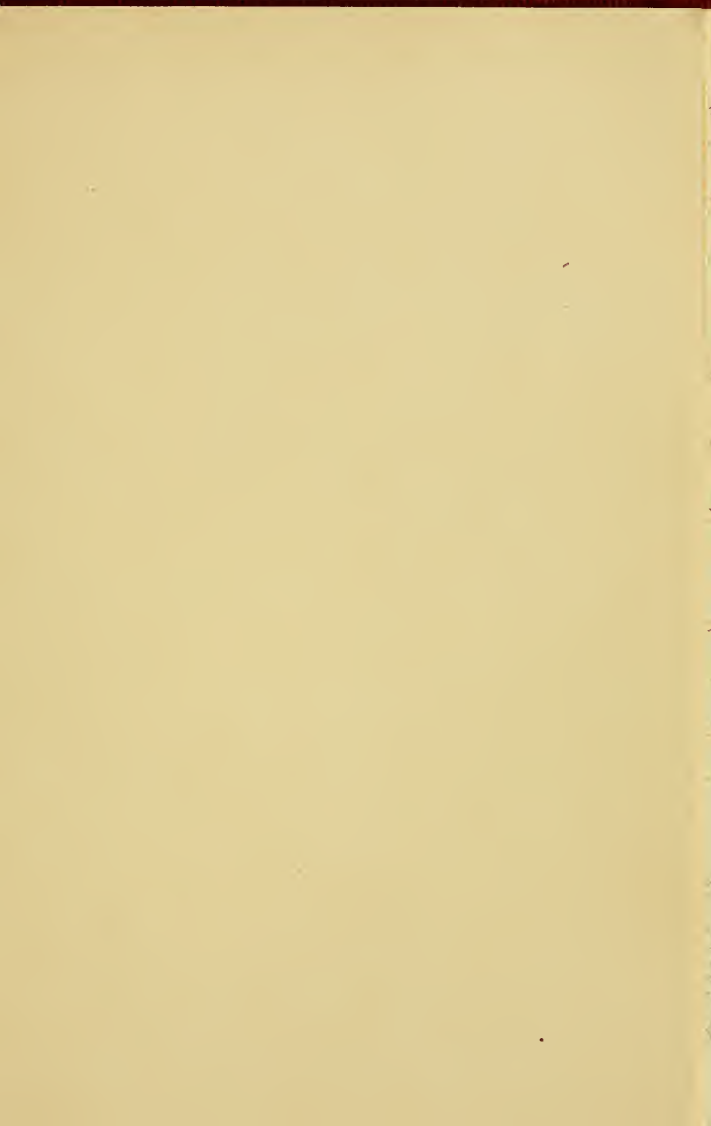
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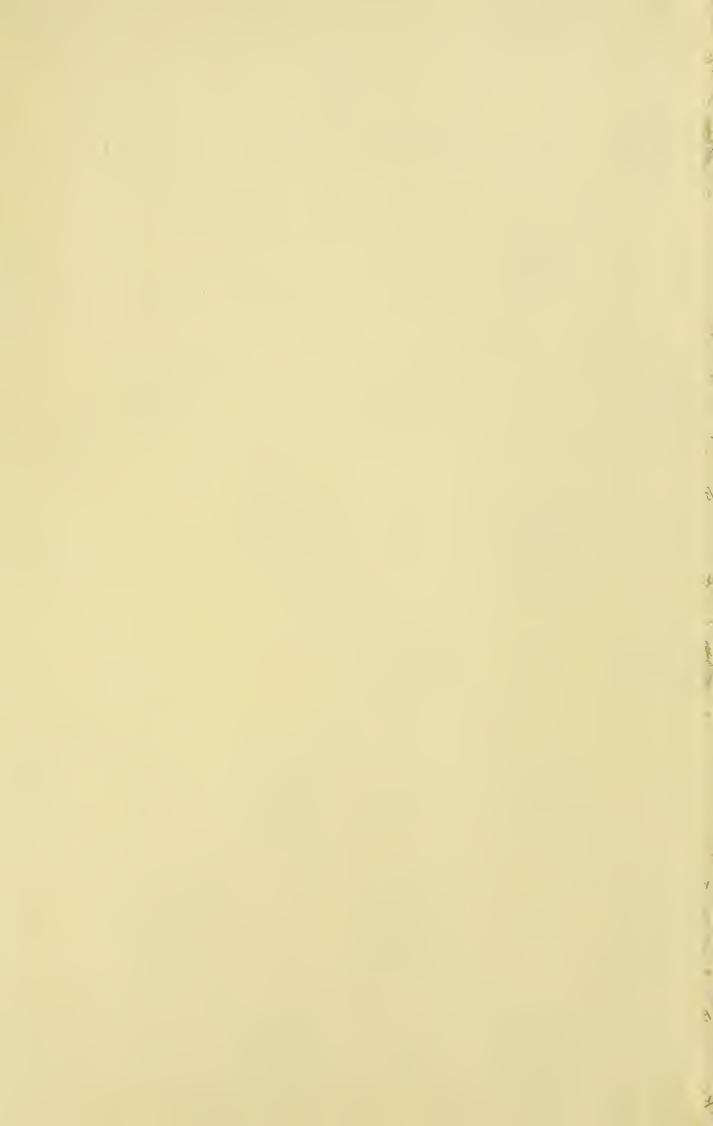
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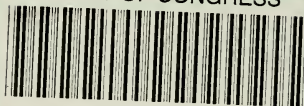
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